

FIG. 1

BEST AVAILABLE COPY

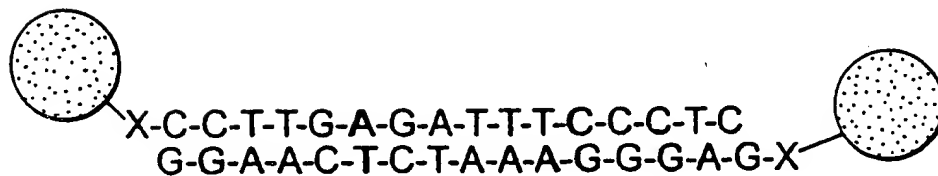
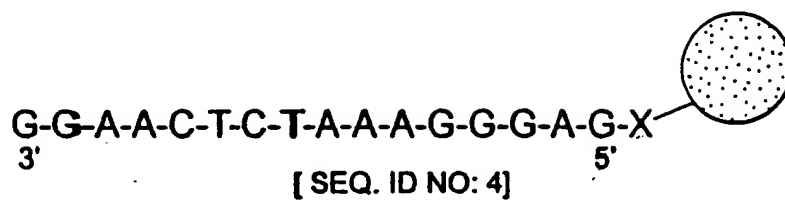
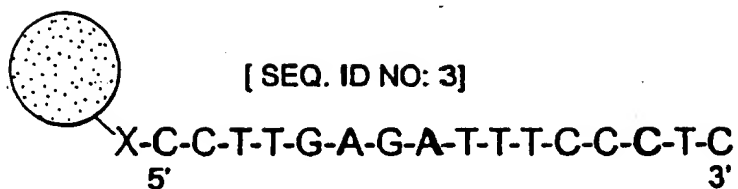


FIG. 2

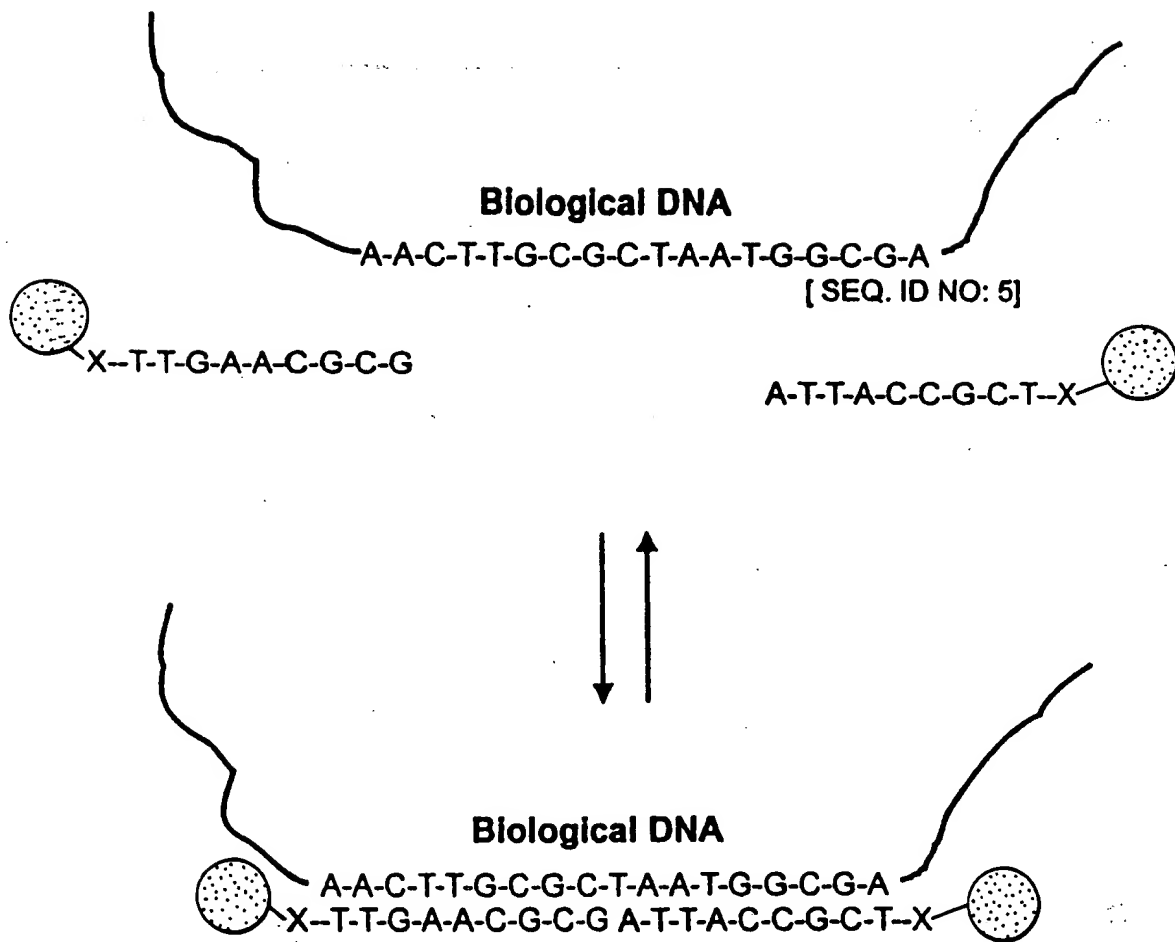
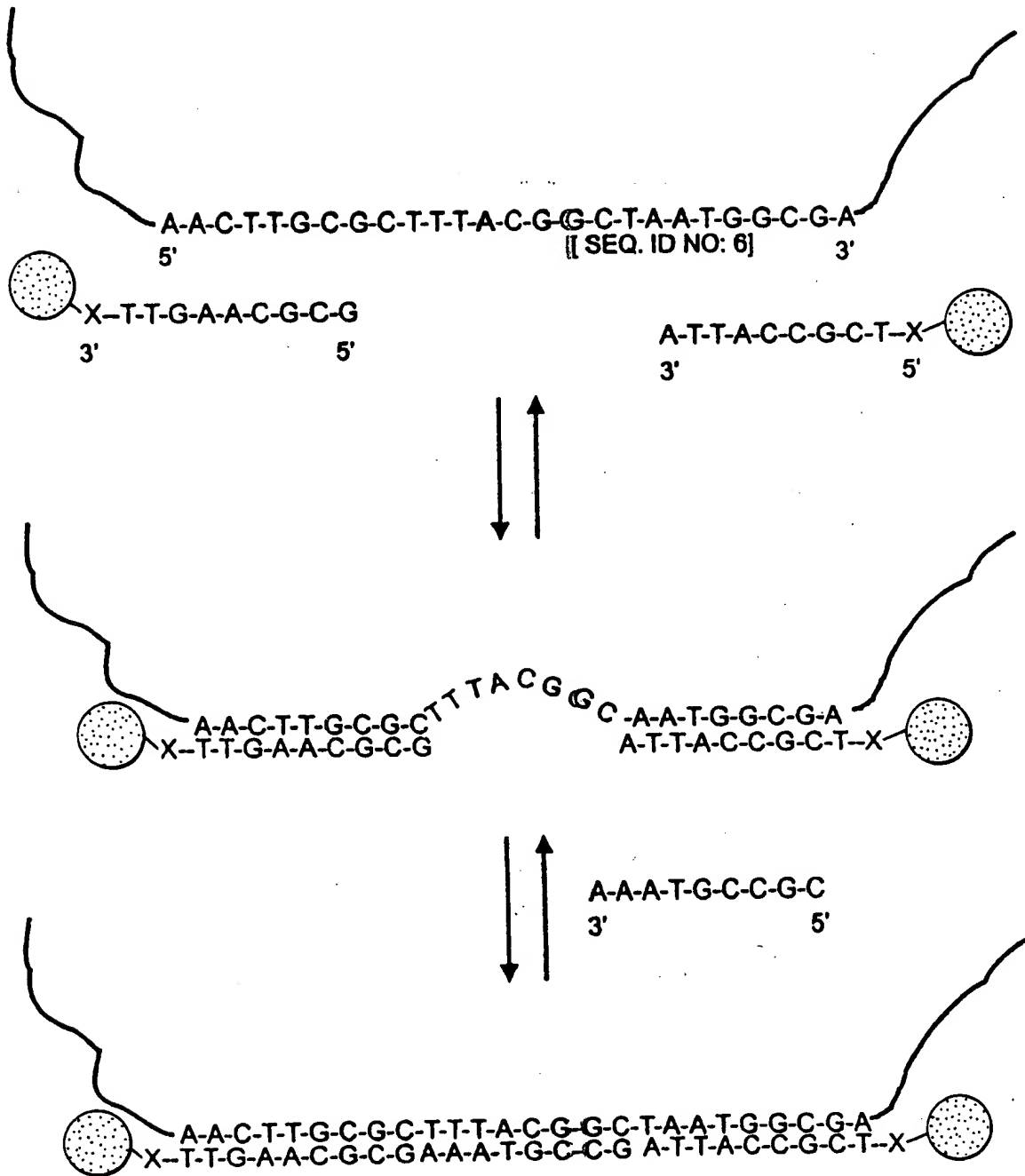


FIG. 3



Linking oligonucleotide

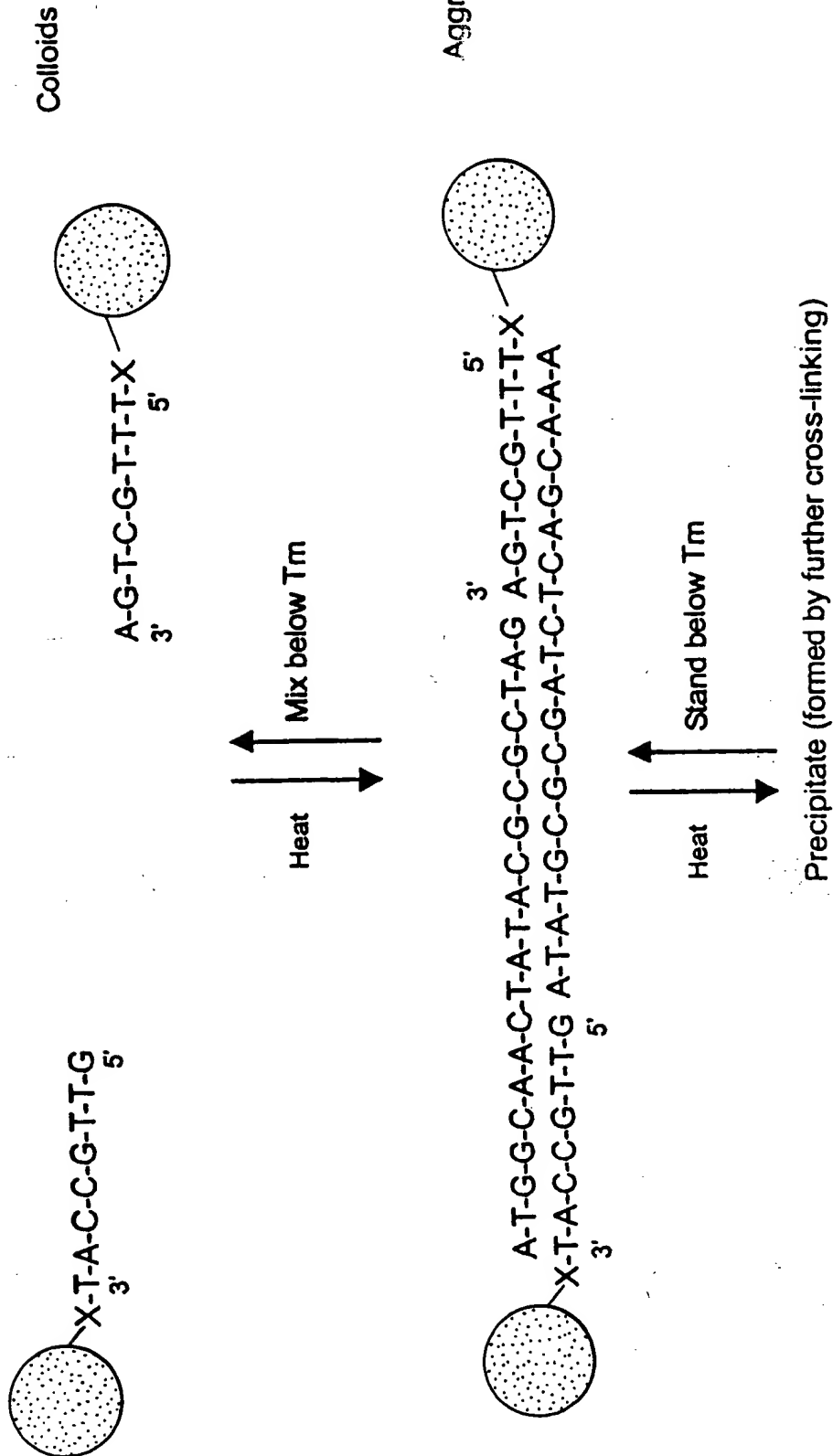
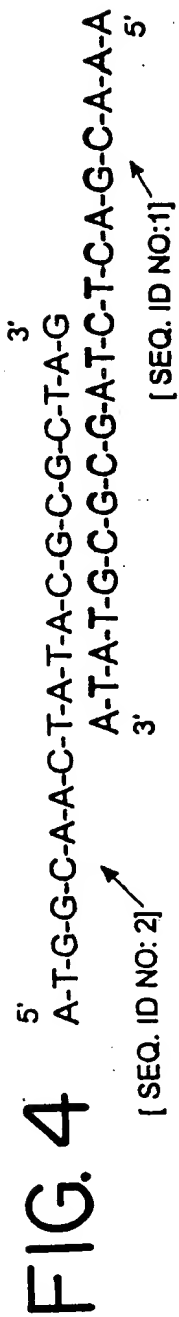
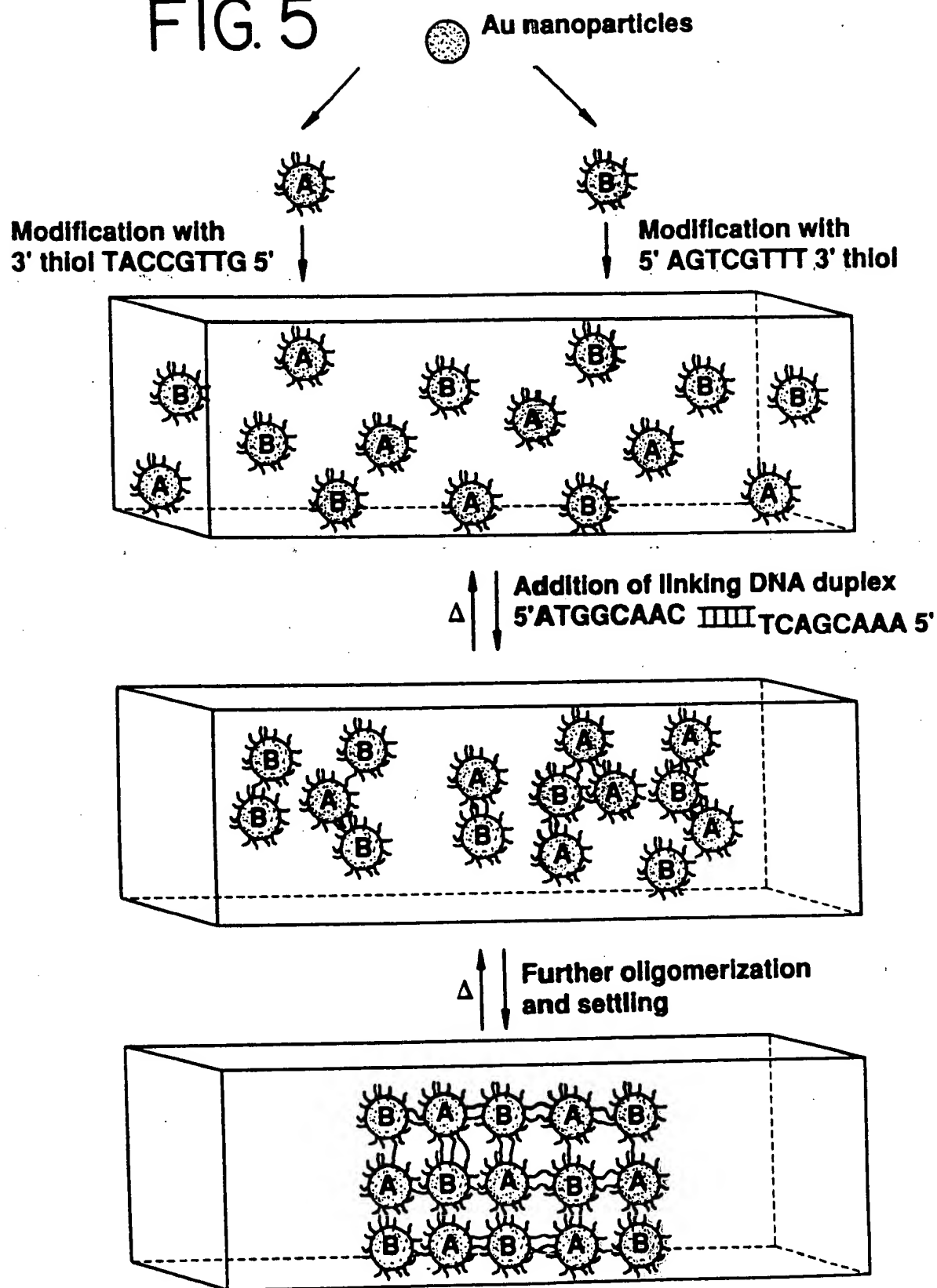
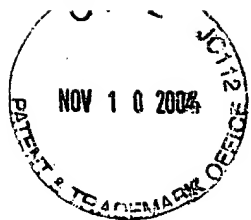


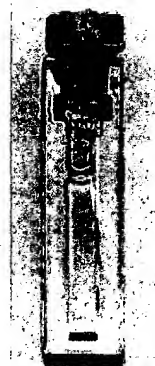
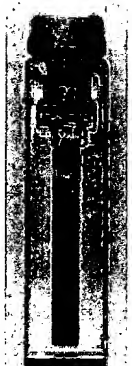
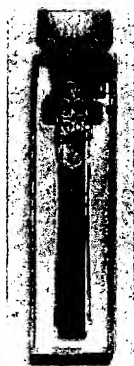
FIG. 5





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FIG. 6A FIG. 6B FIG. 6C





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FIG. 7

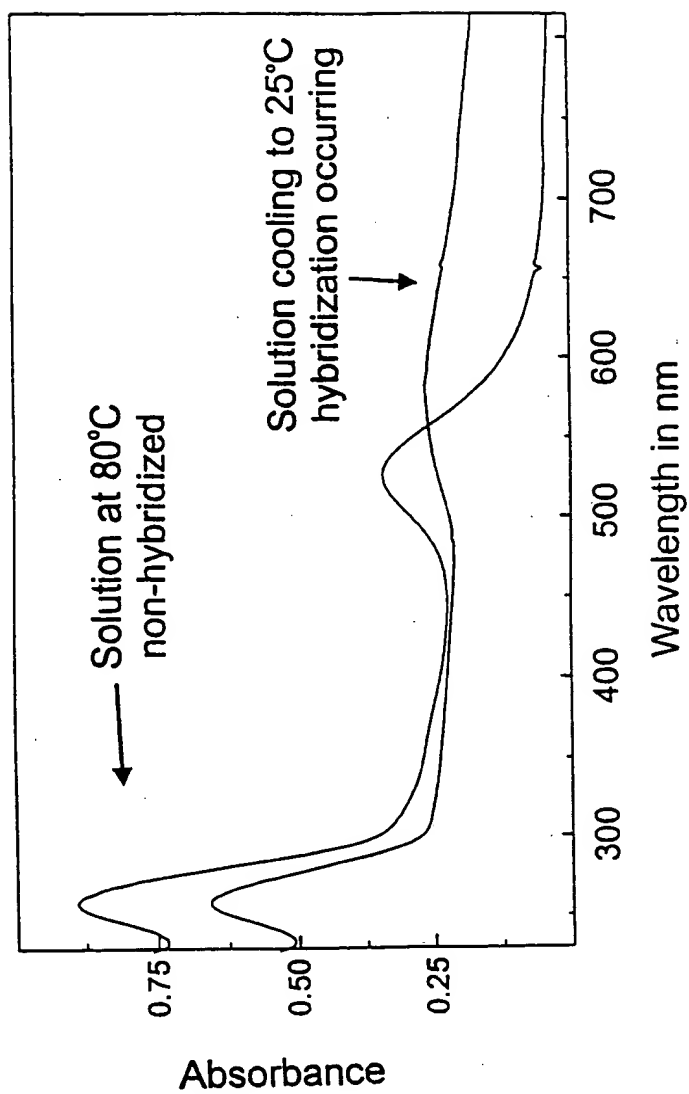


FIG. 8B

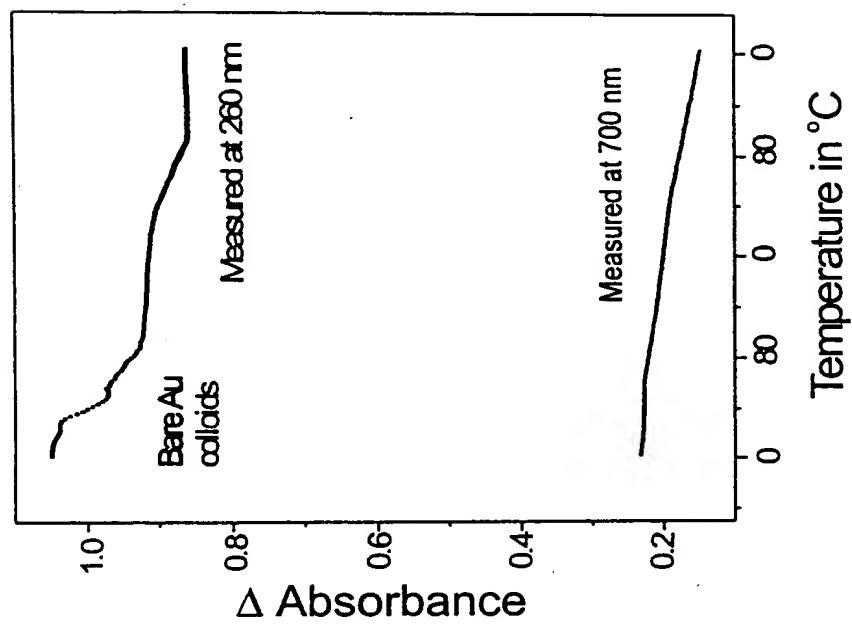
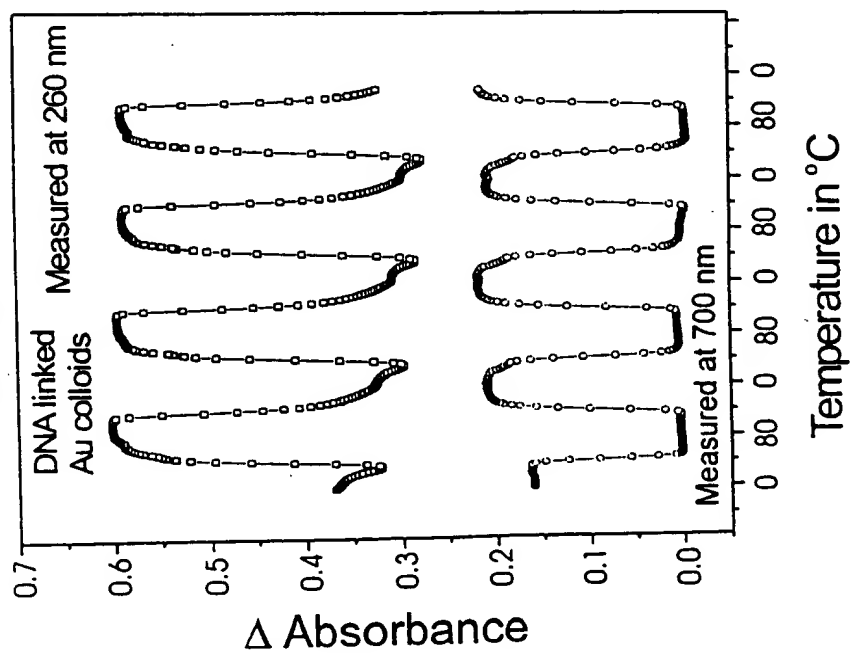


FIG. 8A





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FIG. 9A

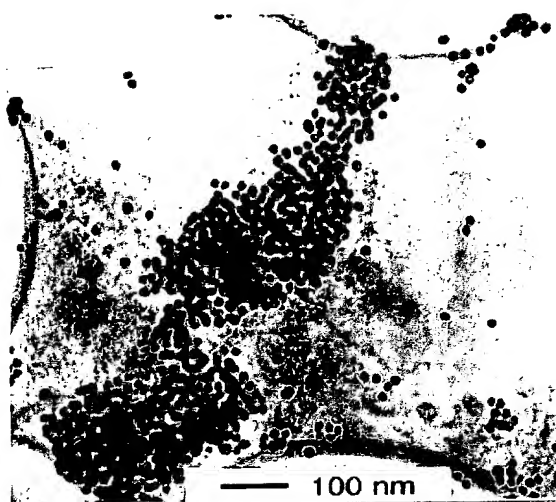


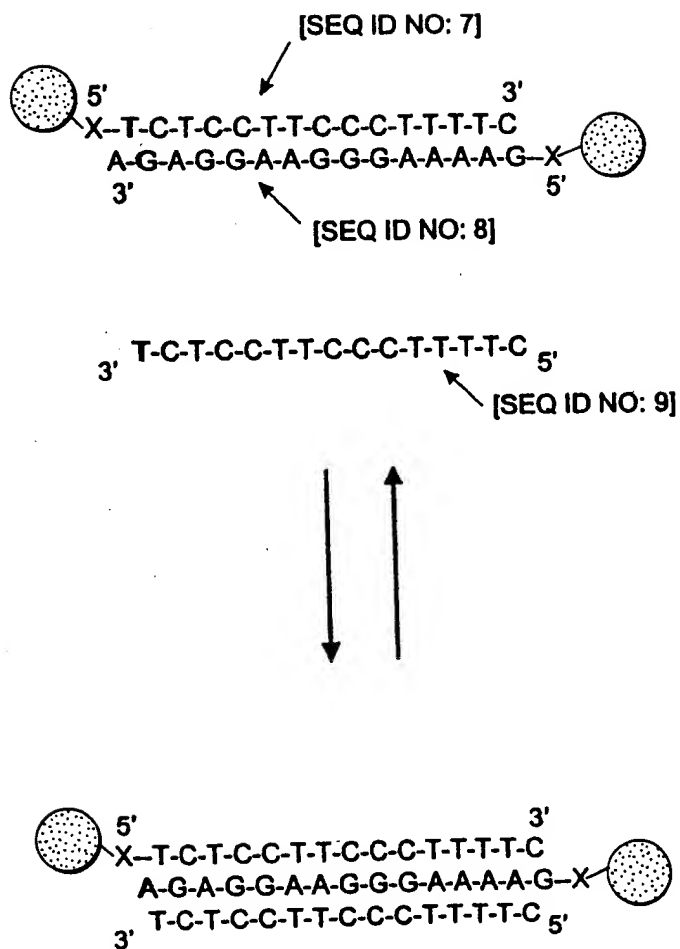
FIG. 9B





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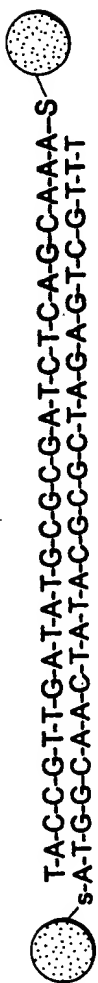
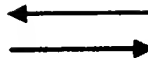
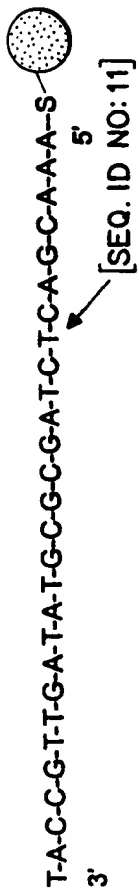
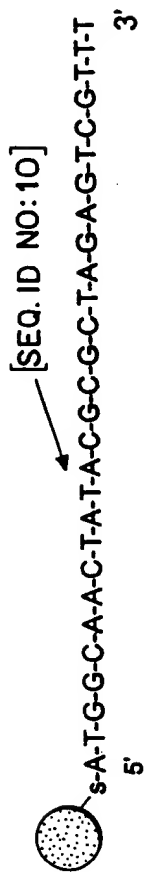
FIG. 10





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FIG. II





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FIG. 13A

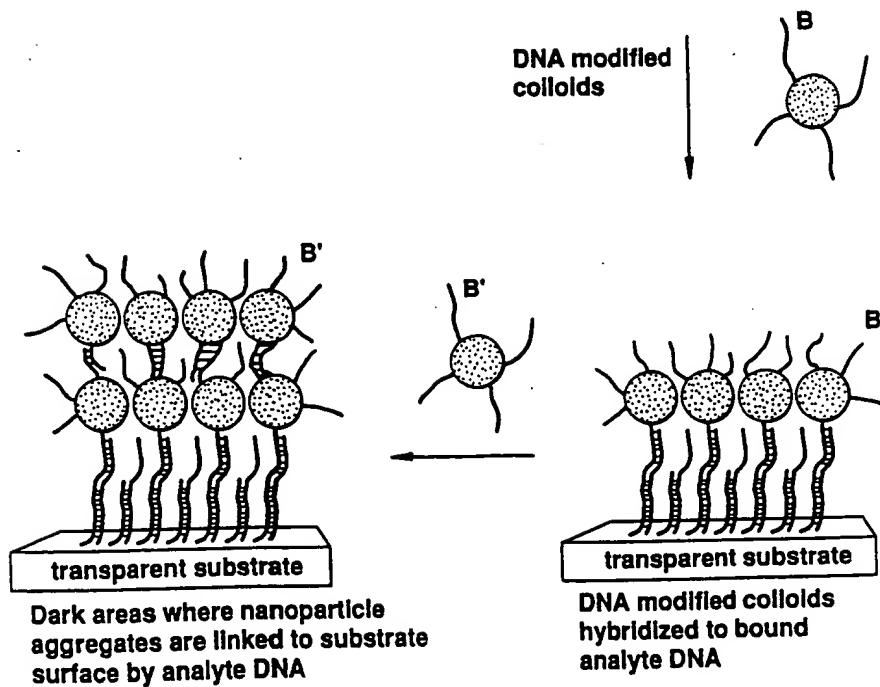
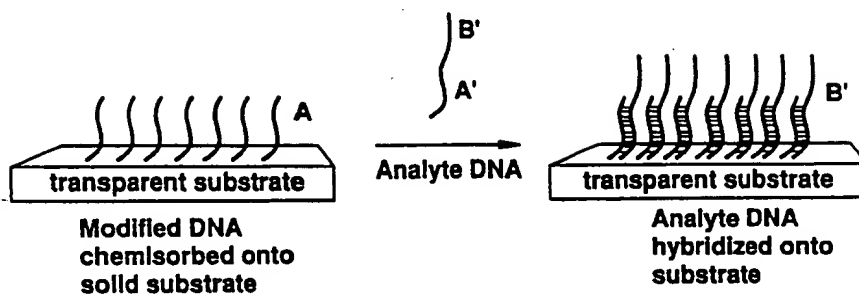




FIG. 13B

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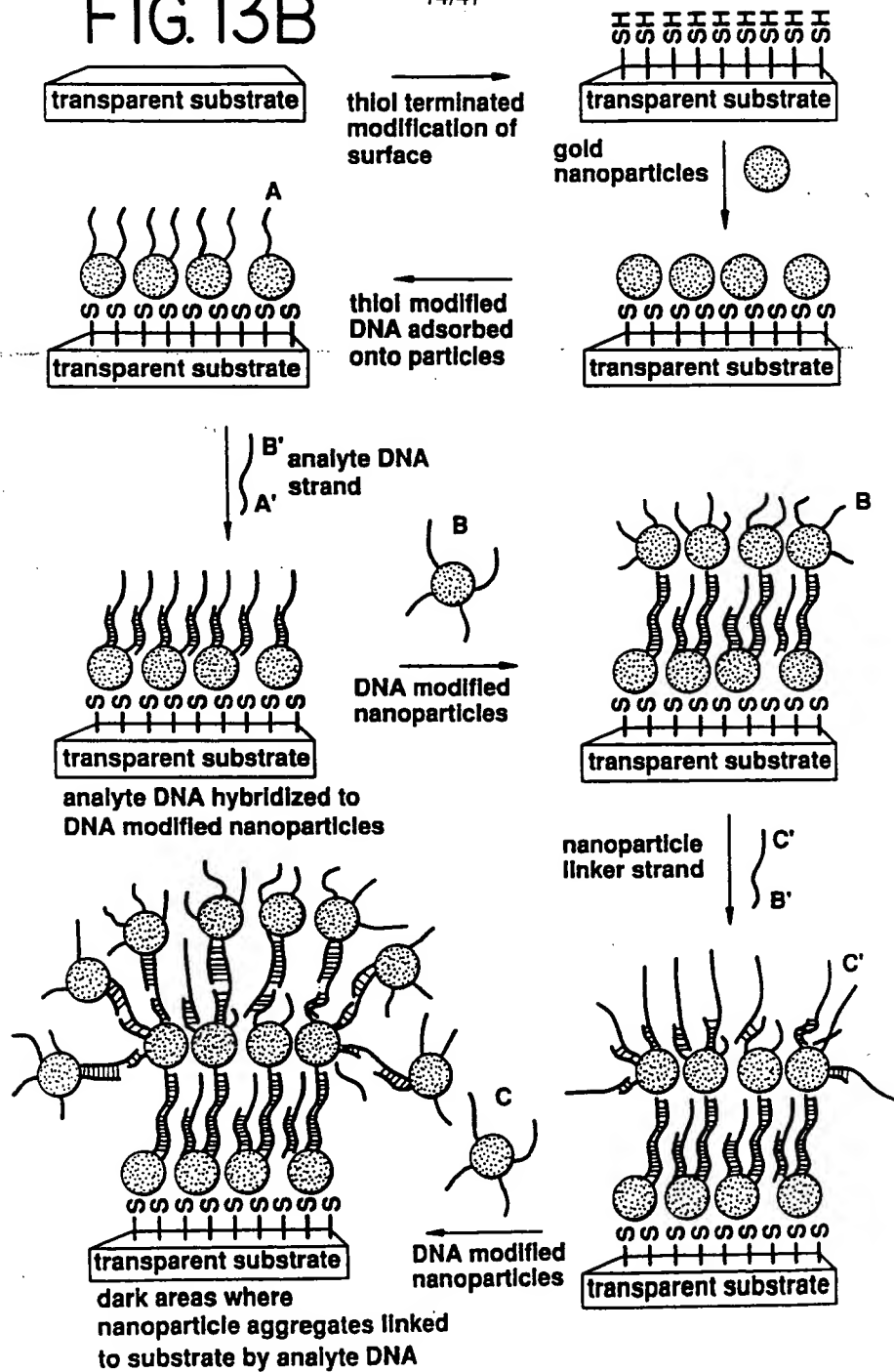




FIG. 14A

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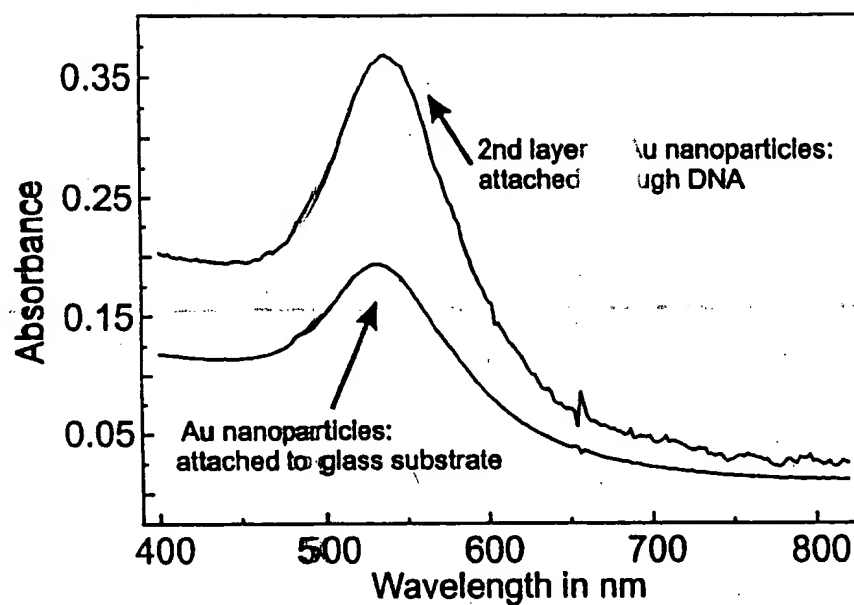
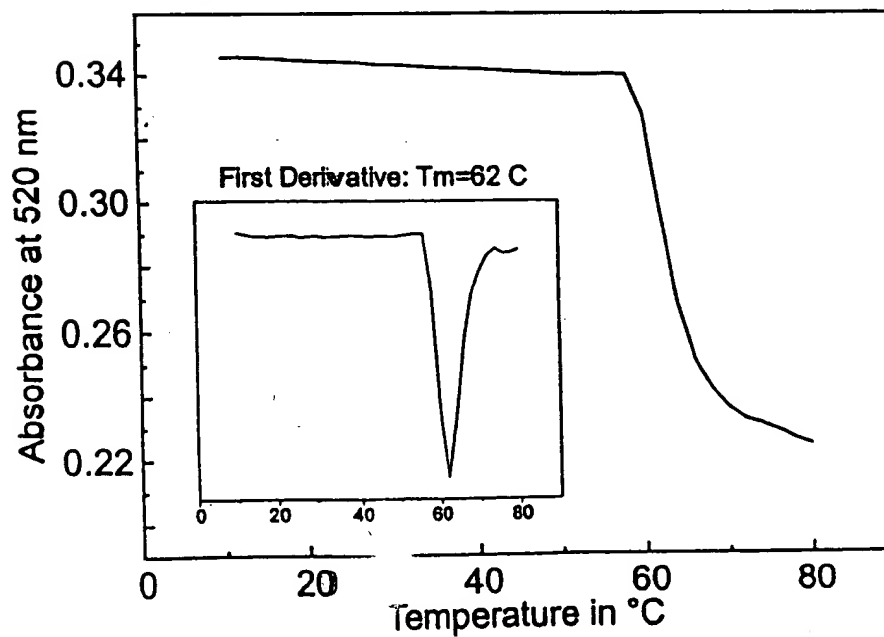


FIG. 14B





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FIG. 15A

Probes with No Target



FIG. 15B

Half-Complementary Target

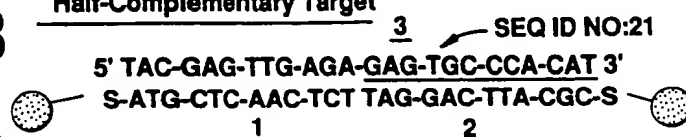


FIG. 15C

Complementary Target

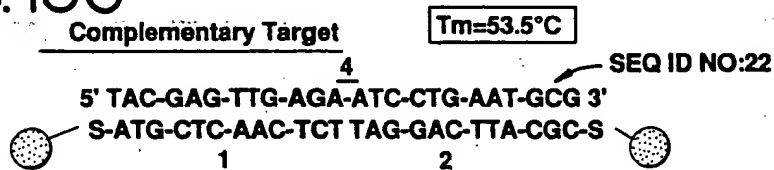


FIG. 15D

ONE Base-Pair Mismatch at Probe Head

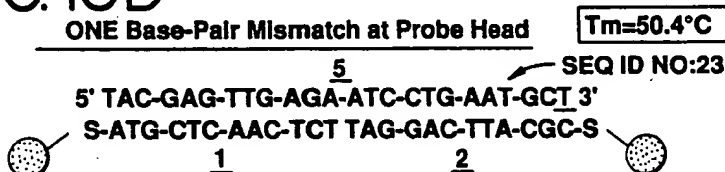


FIG. 15E

ONE Base-Pair Mismatch at Probe Tail

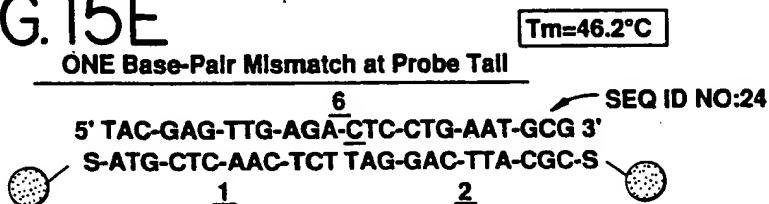


FIG. 15F

ONE Base Deletion

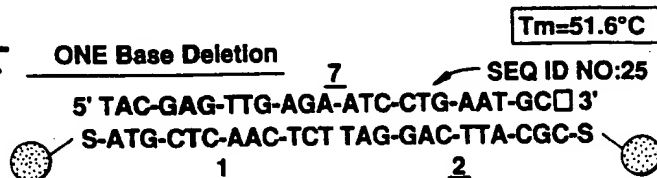
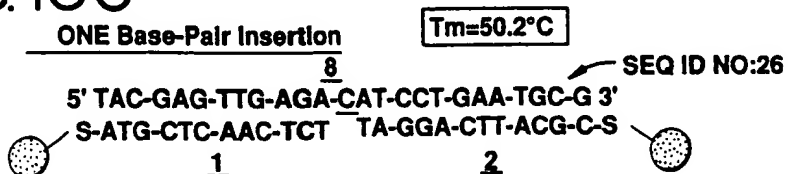


FIG. 15G

ONE Base-Pair Insertion





24 Base Template

FIG. 16A

5' TAC-GAG-TTG-AGA-ATC-CTG-AAT-GCG 3'
—S-ATG-CTC-AAC-TCT TAG-GAC-TTA-CGC-S —
1 2

FIG. 16B

48 Base Template with Complementary 24 Base Filler

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5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-ATC-CTG-AAT-GCG 3'
—S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT TAG-GAC-TTA-CGC-S —
1 2

FIG. 16C

72 Base Template with Complementary 48 Base Filler

5' TAC-GAG-TTG-AGA-CCG-TTA-AGA-CGA-GGC-AAT-CAT-GCA-TAT-ATT-GGA-CGC-TTT-ACG-GAC-AAC-ATC-CTG-AAT-GCG 3'
—S-ATG-CTC-AAC-TCT GGC-AAT-TCT-GCT-CCG-TTA-GTA-CGT-ATA-TAA-CCT-GCG-AAA-TGC-CTG-TTG TAG-GAC-TTA-CGC-S —
1 2



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FIG. 17A

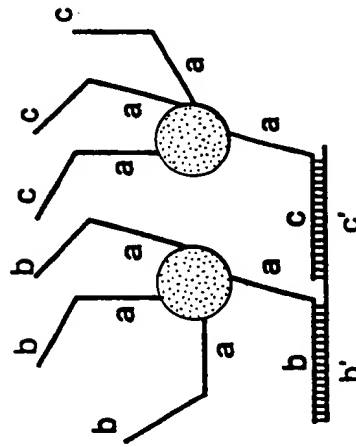


FIG. 17B

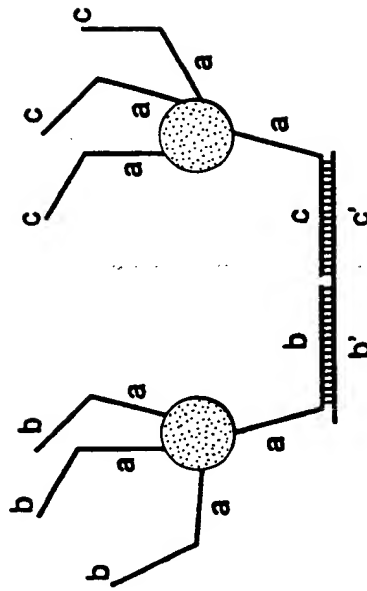
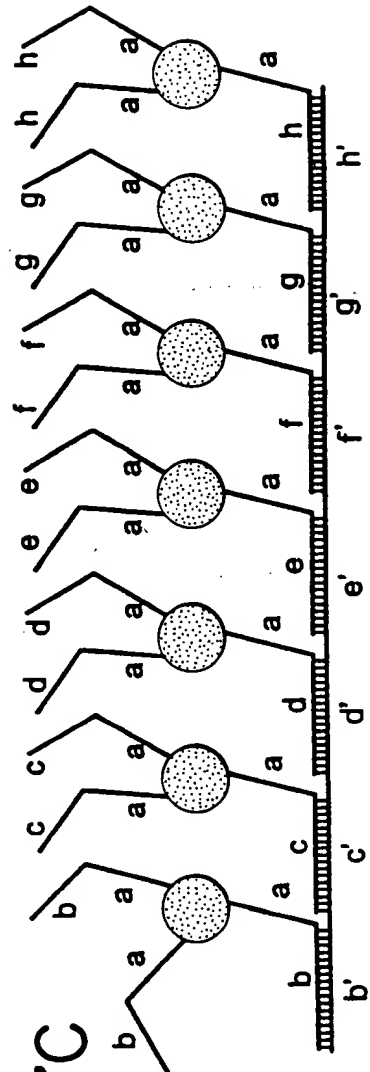


FIG. 17C





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FIG. 17D

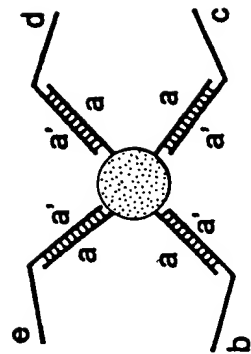
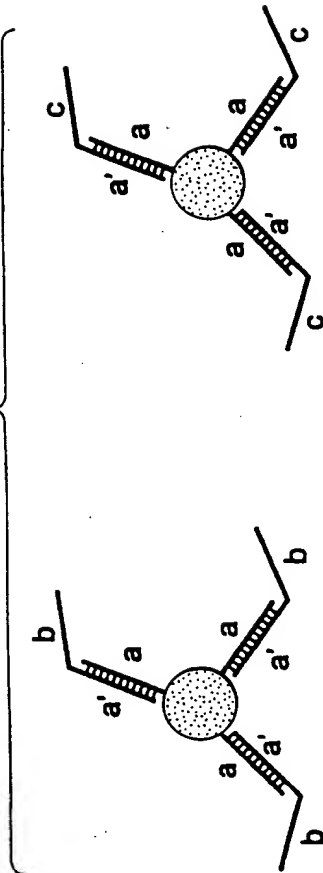
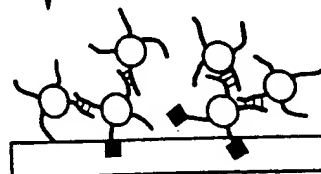
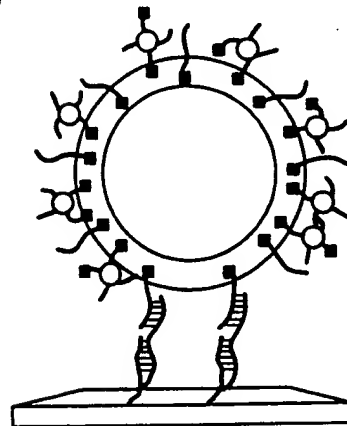
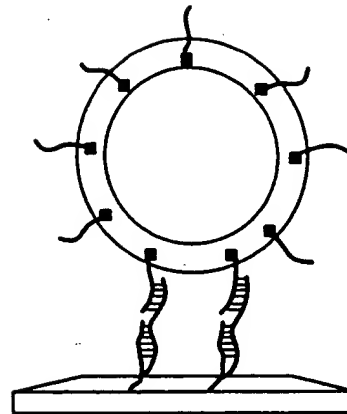


FIG. 17E

FIG. 18

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FIG. 19A

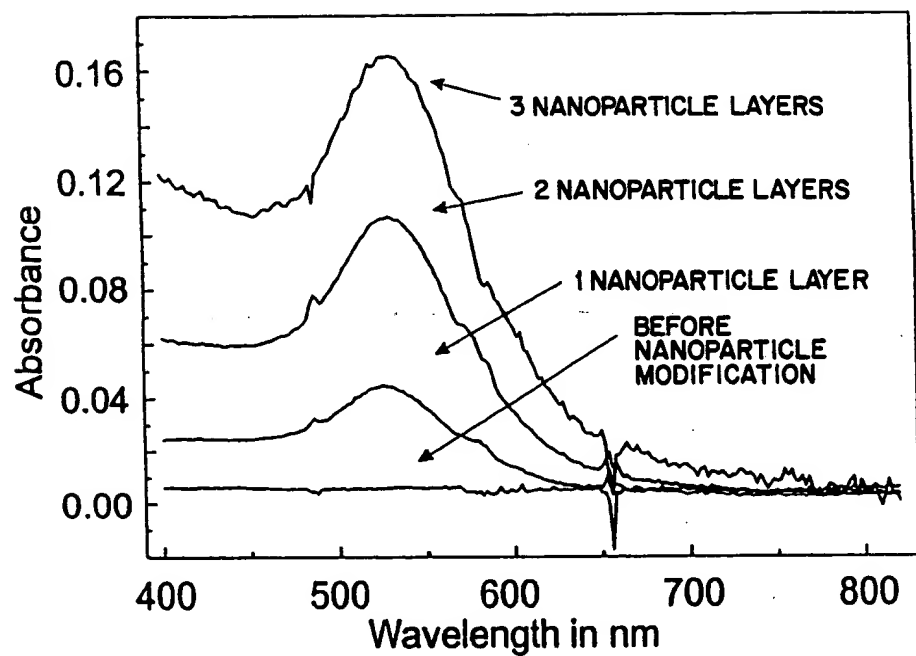
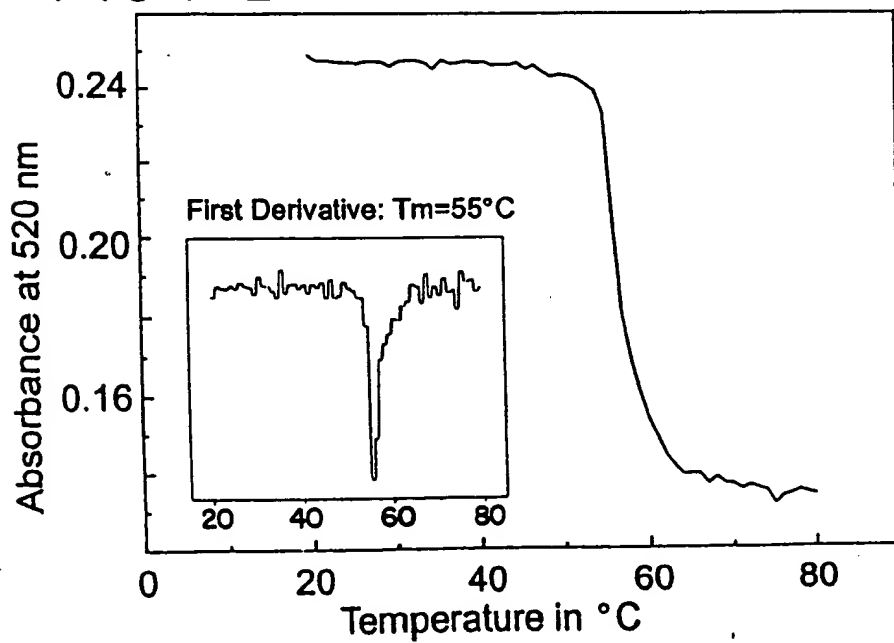


FIG. 19B





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FIG. 20A

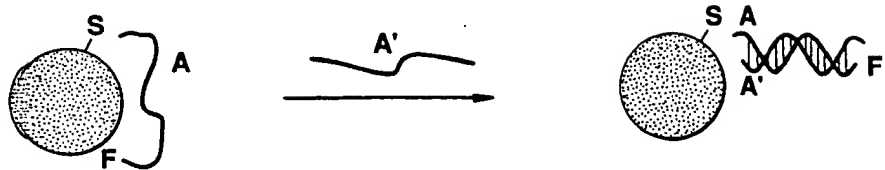
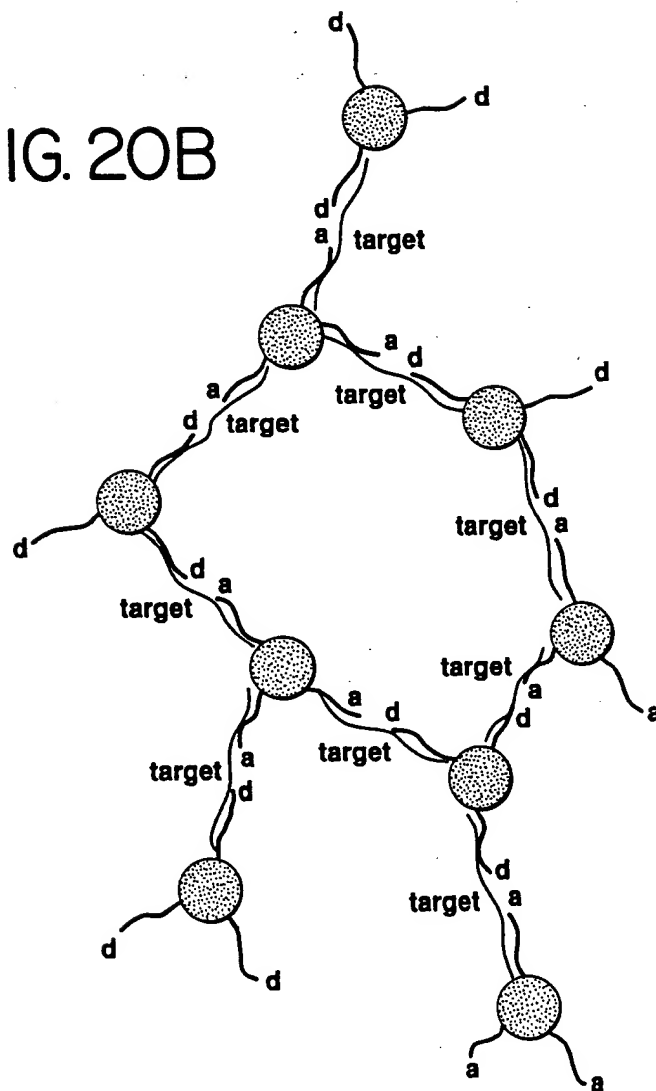


FIG. 20B





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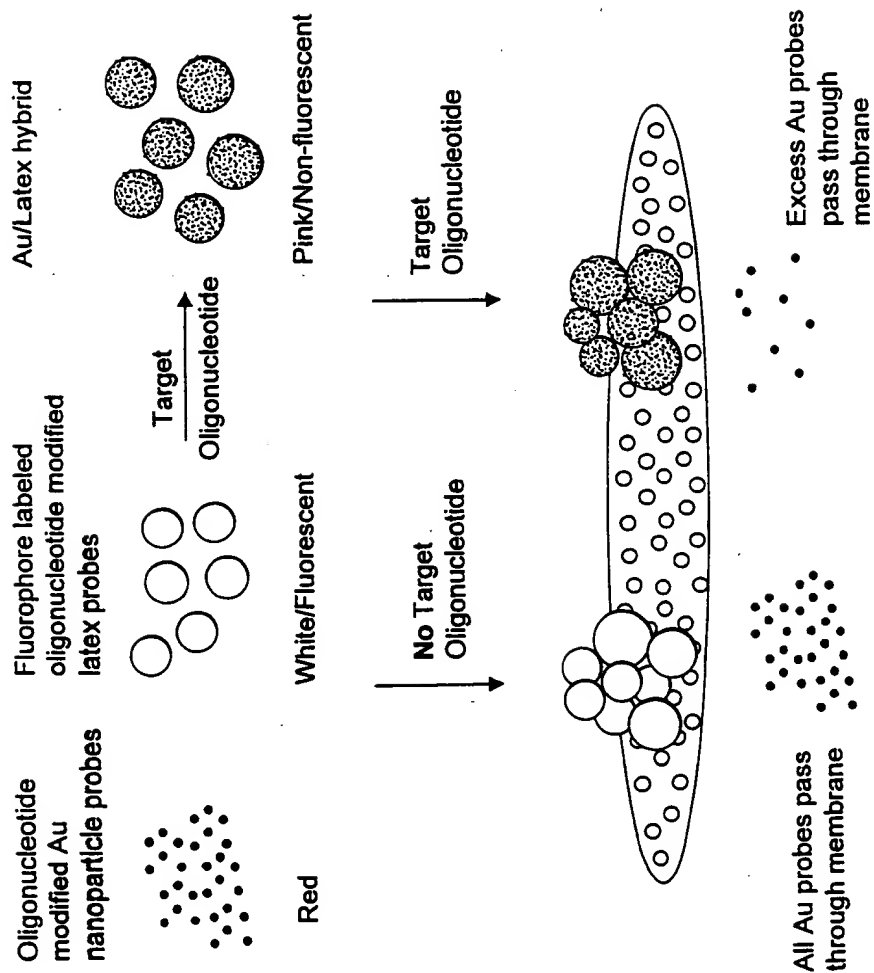
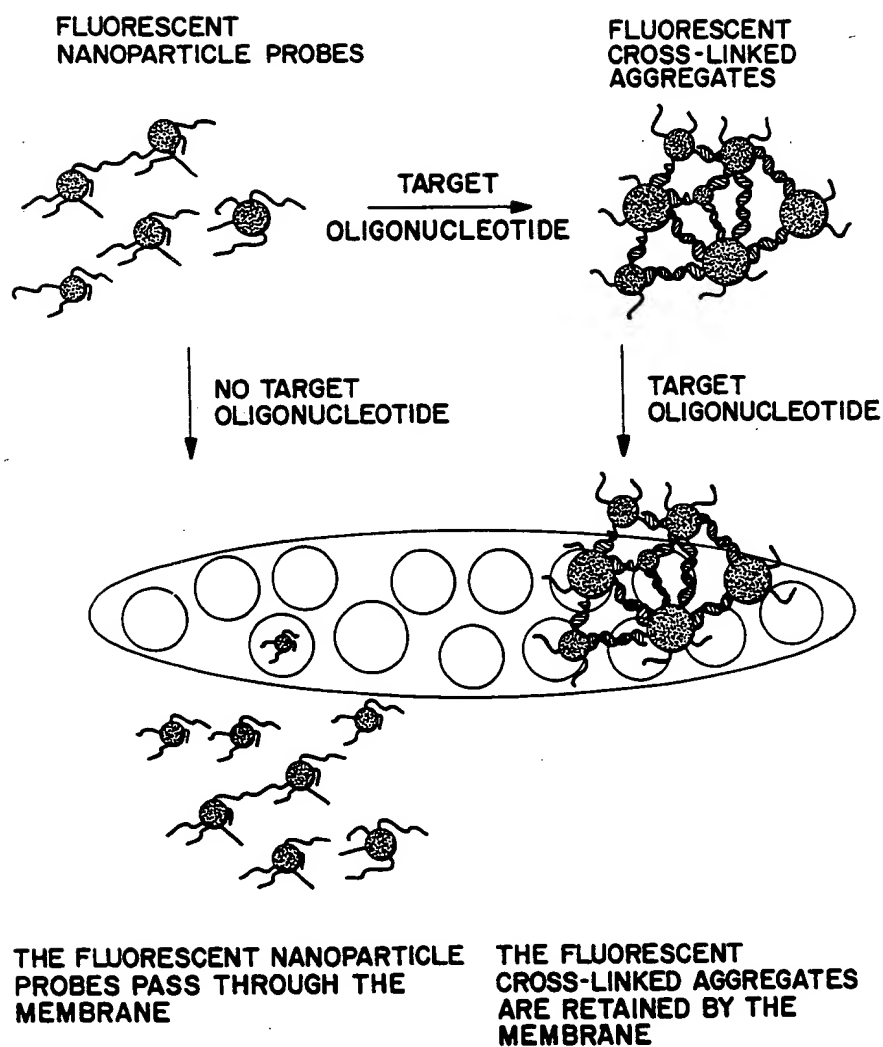


FIG. 21



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FIG. 22





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FIG. 23

Anthrax PCR Product

5'G GCG GAT GAG TCA GTA GTT AAG GAG GCT CAT AGA GAA GTA ATT AAT
3'C CGC CTA CTC AGT CAT CAA TTC CTC CGA GTA TCT CTT CAT TAA TTA

TCG TCA ACA GAG GGA TTA TTG TTA AAT ATT GAT AAG GAT ATA AGA AAA
AGC AGT TGT CTC CCT AAT AAC AAT TTA TAA CTA TTC CTA TAT TCT TTT

ATA TTA TCC AGG GTT ATA TTG TAG AAA TTG AAG ATA CTG AAG GGC TT 3'
TAT AAT AGG TCC CAA TAT AAC ATC TTT AAC TTC TAT GAC TTC CCG AA 5'

141 mer Anthrax PCR product [SEQ ID NO:36]

3' CTC CCT AAT AAC AAT—

[SEQ ID NO:37]

3' TTA TAA CTA TTC CTA—

[SEQ ID NO:38]

Oligonucleotide-Nanoparticle Probes

Blocker Oligonucleotides

3' C CGC CTA CTC AGT CAT CAA TTC CTC CGA GT
3' A TCT CTT CAT TAA TTA AGC AGT TGT
3' TAT TCT TTT TAT AAT AGG TCC CAA TAT
3' AAC ATC TTT AAC TTC TAT GAC TTC CCG AA

[SEQ ID NO:39]

[SEQ ID NO:40]

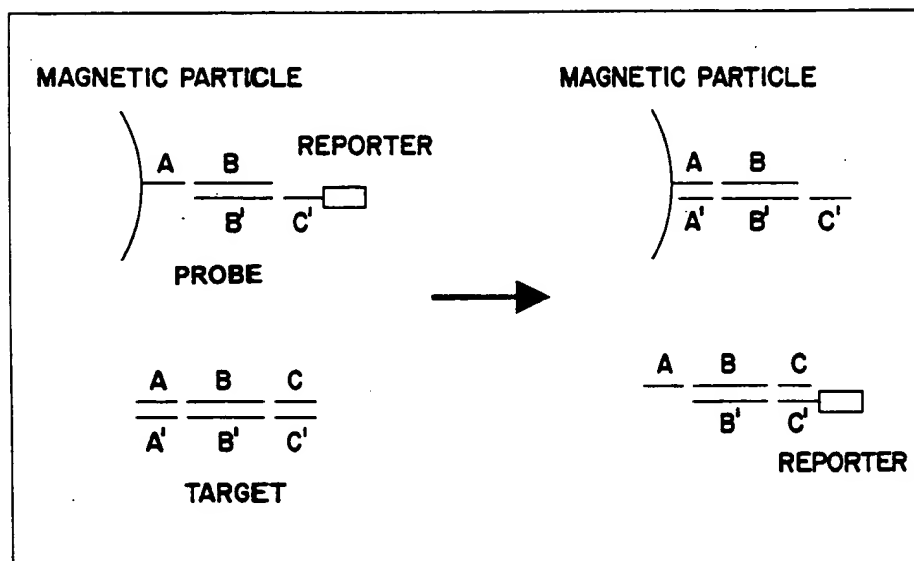
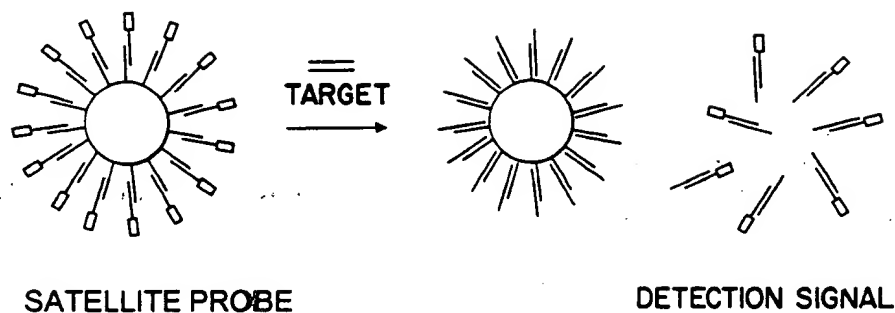
[SEQ ID NO:41]

[SEQ ID NO:42]



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FIG. 24





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FIG. 25A

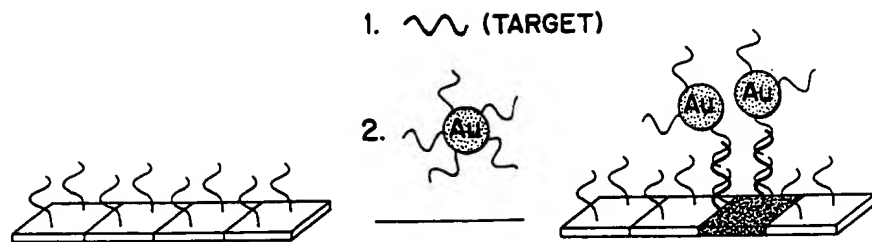
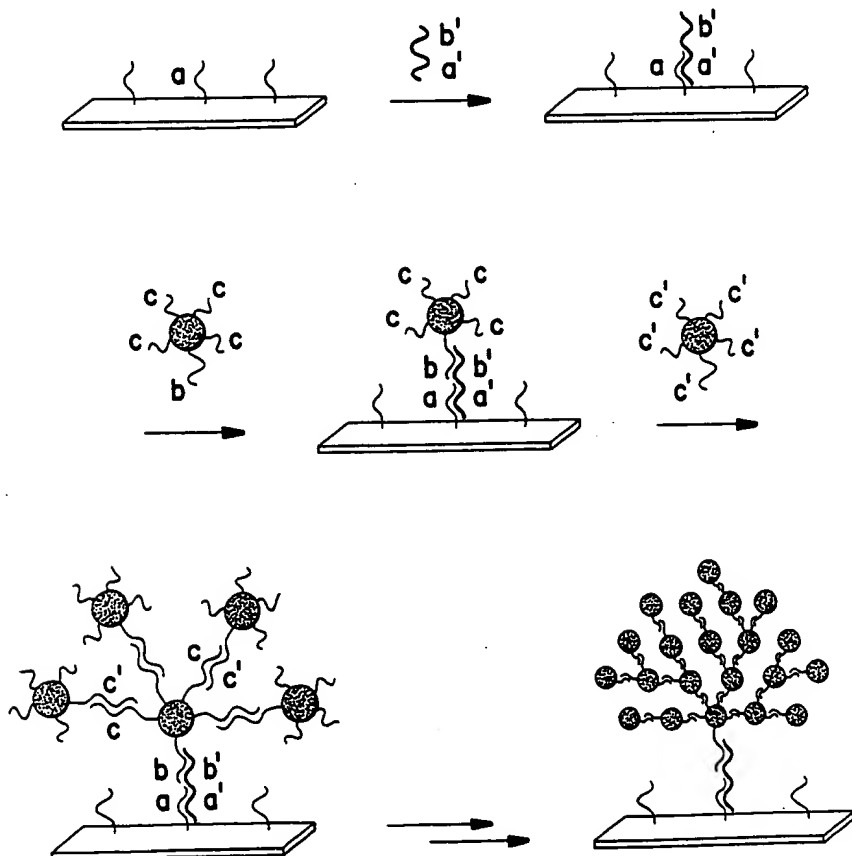


FIG. 25B





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FIG. 26A

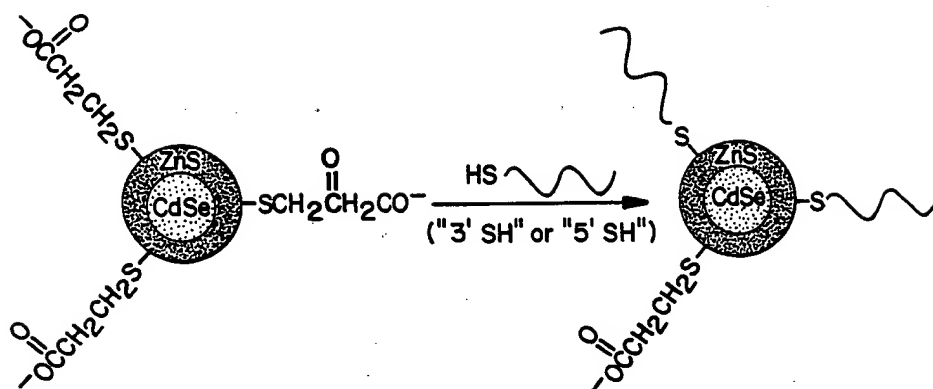
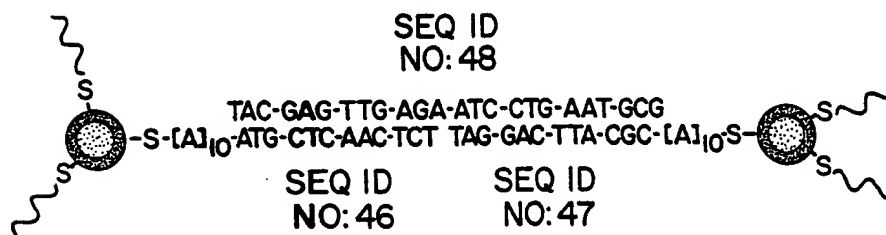


FIG. 26B





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FIG. 27A

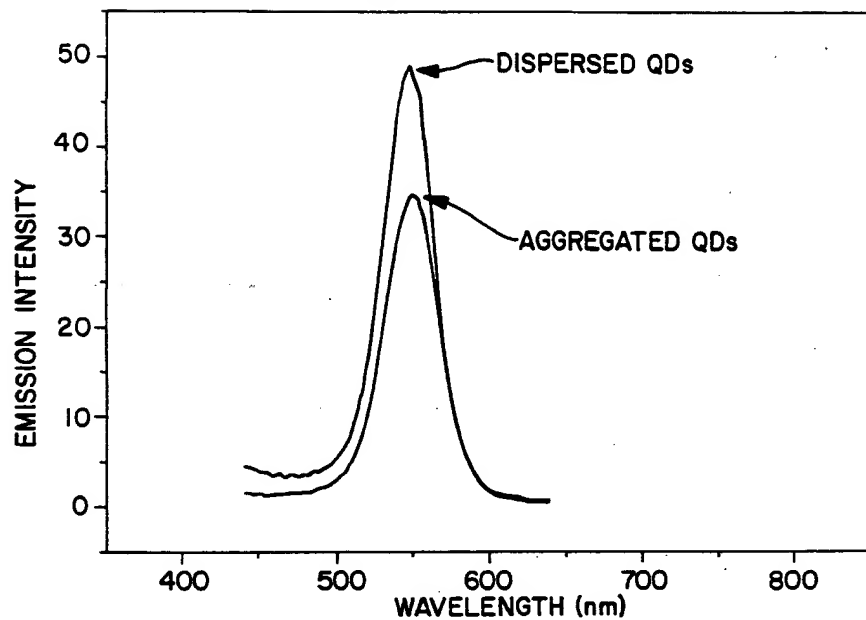
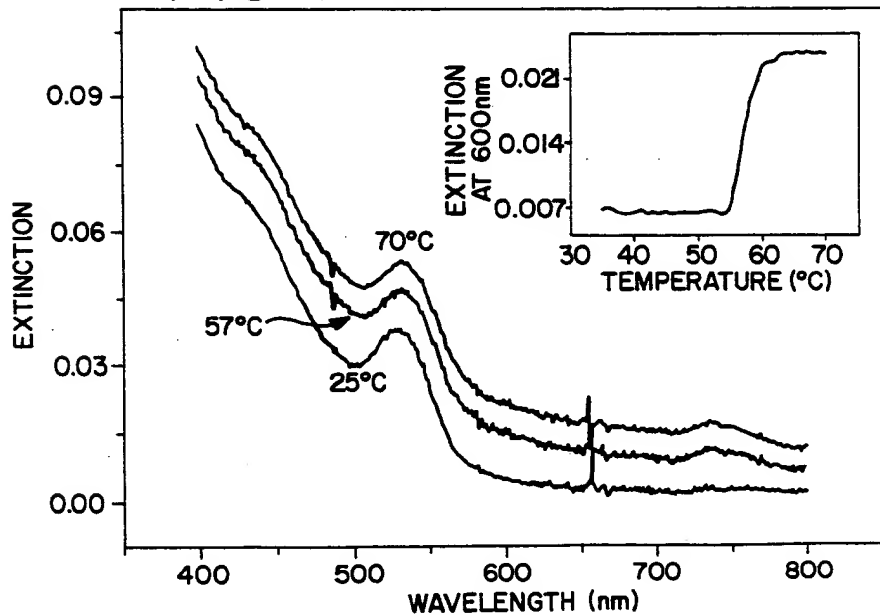


FIG. 27B





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FIG. 27C

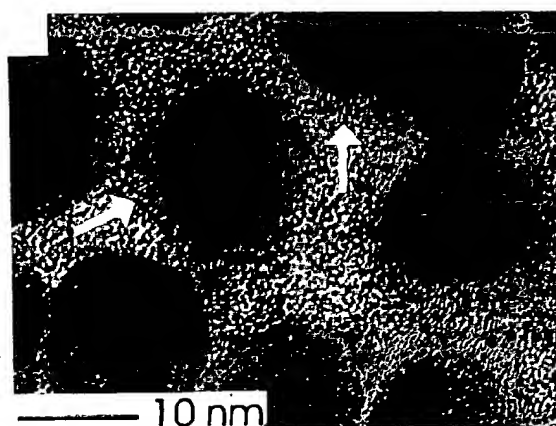
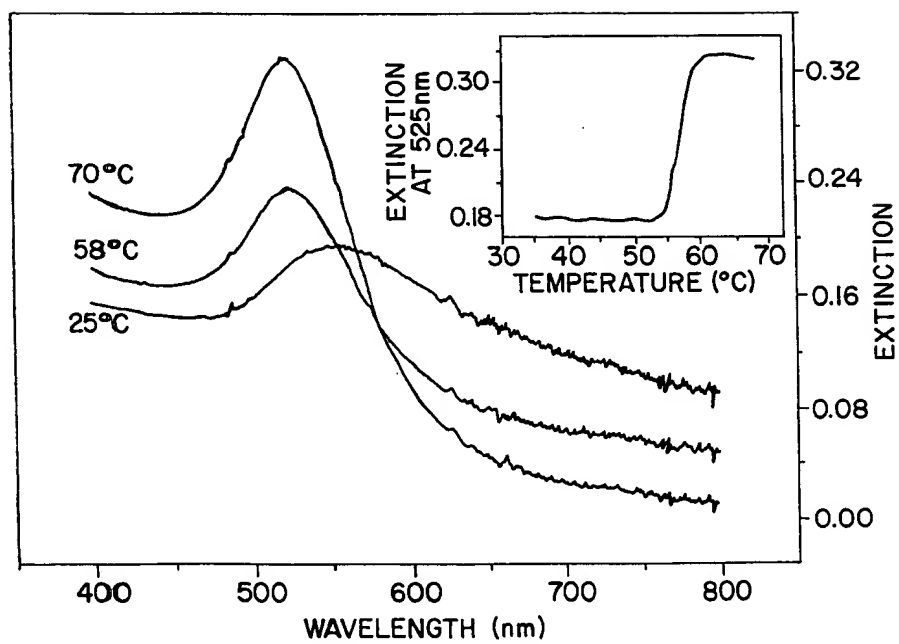


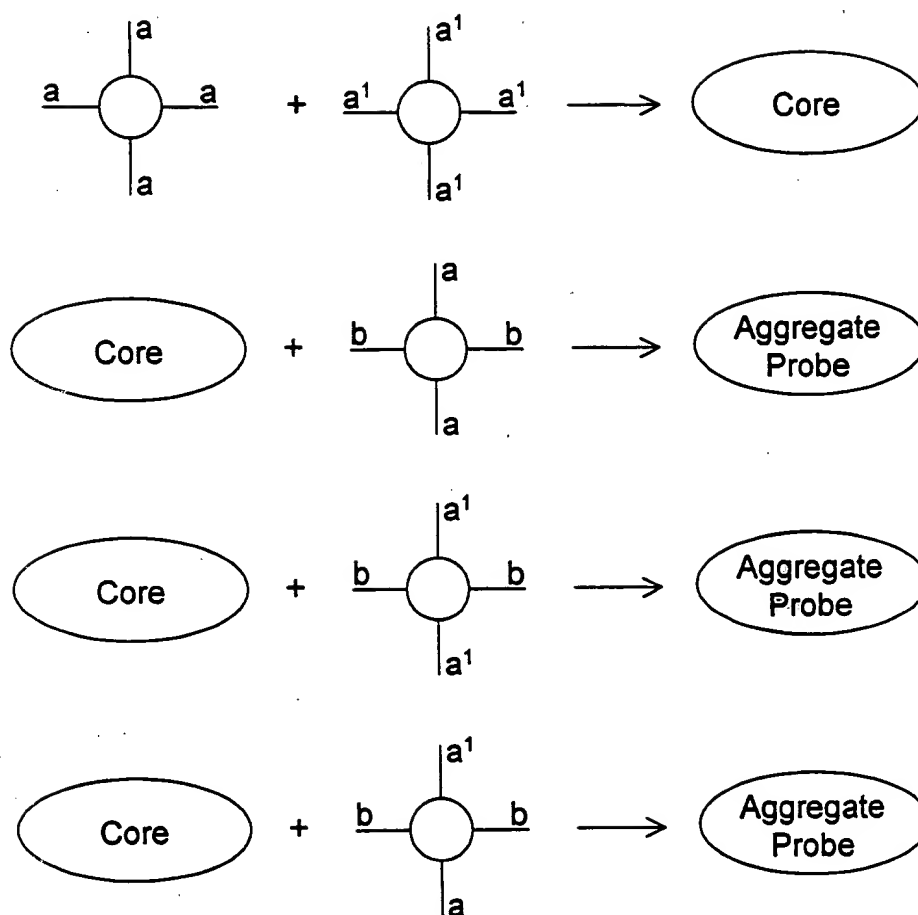
FIG. 27D





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FIG. 28A





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FIG. 28B

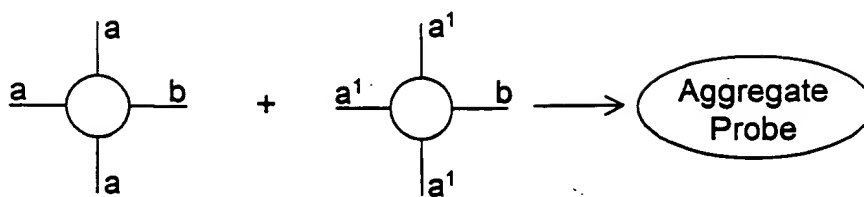
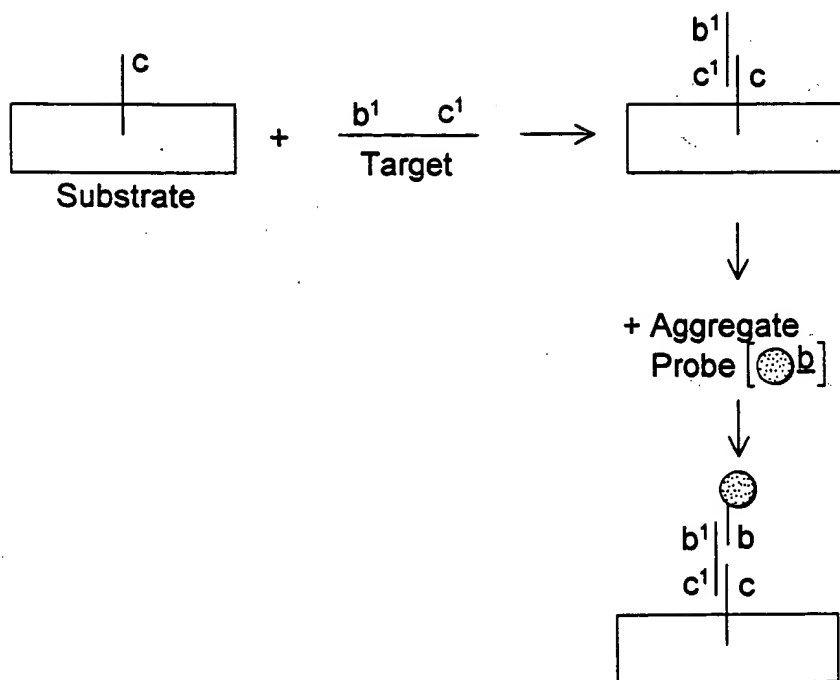
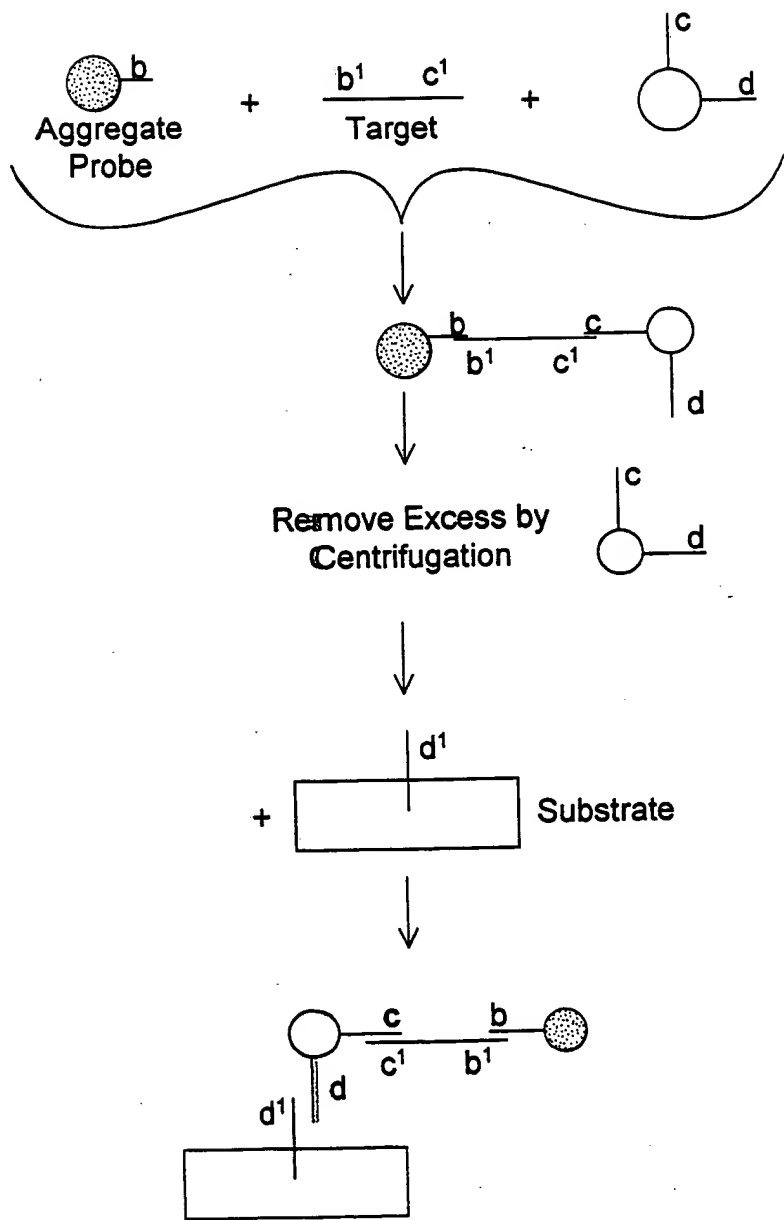


FIG. 28C



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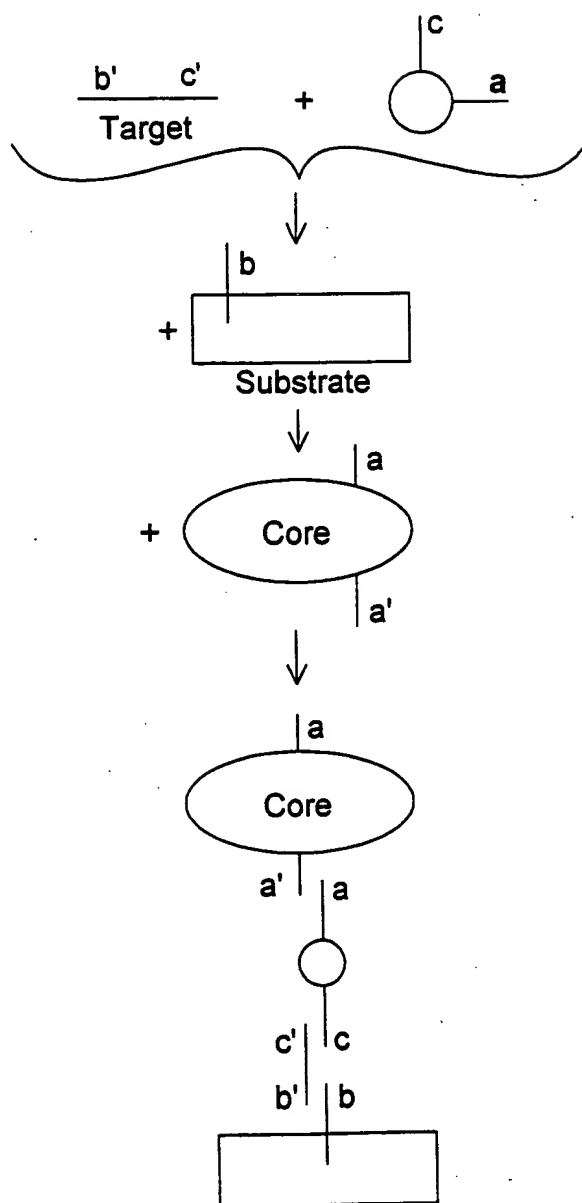
FIG. 28D





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FIG. 28E



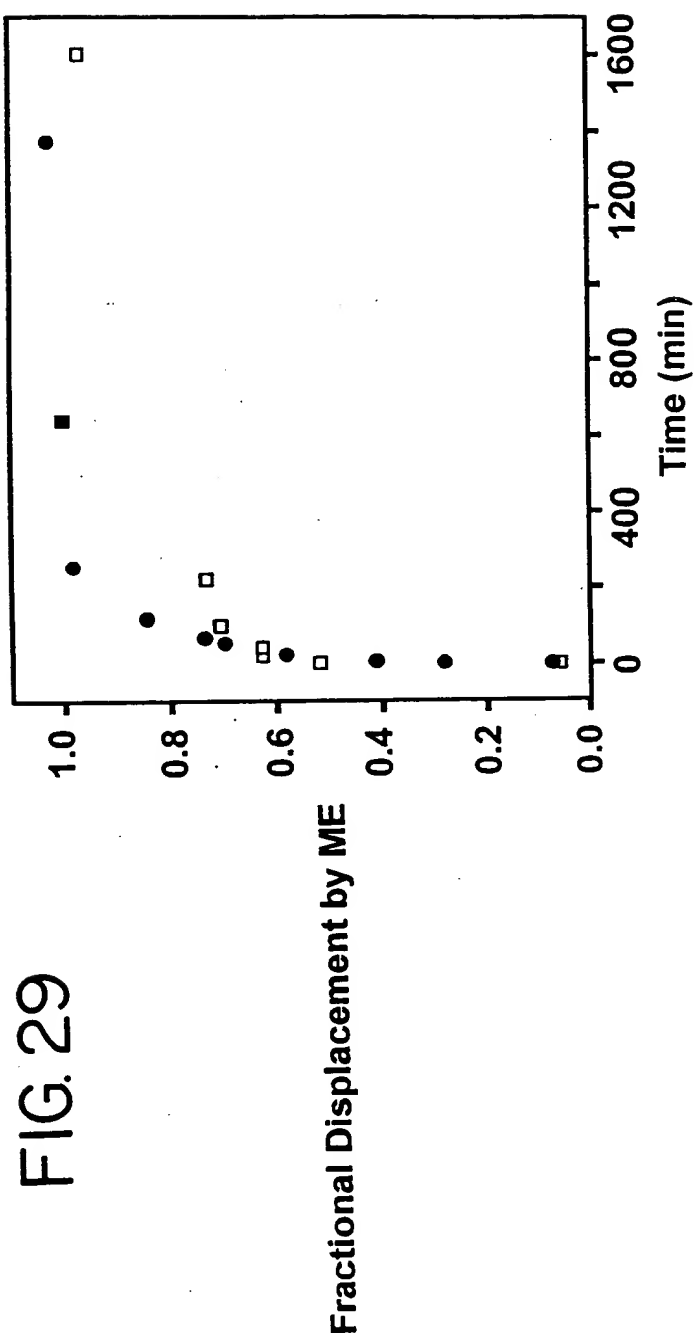
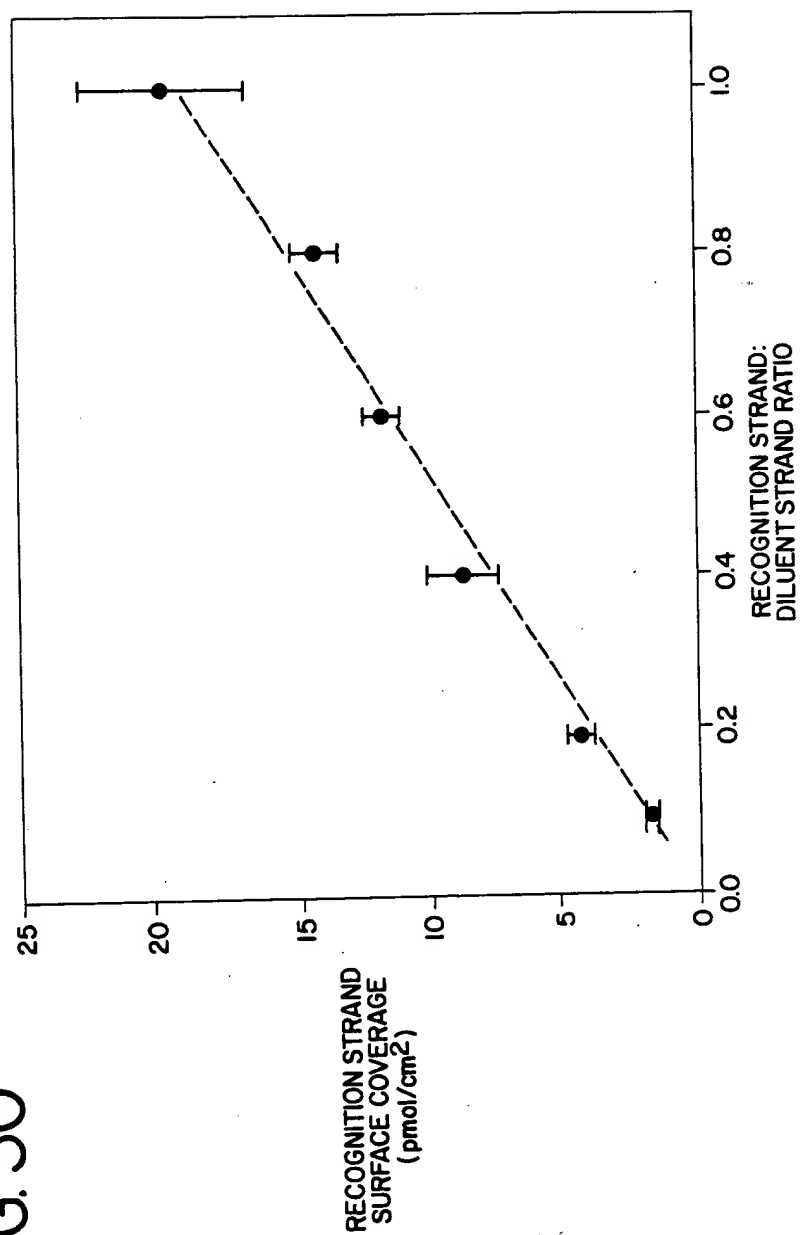




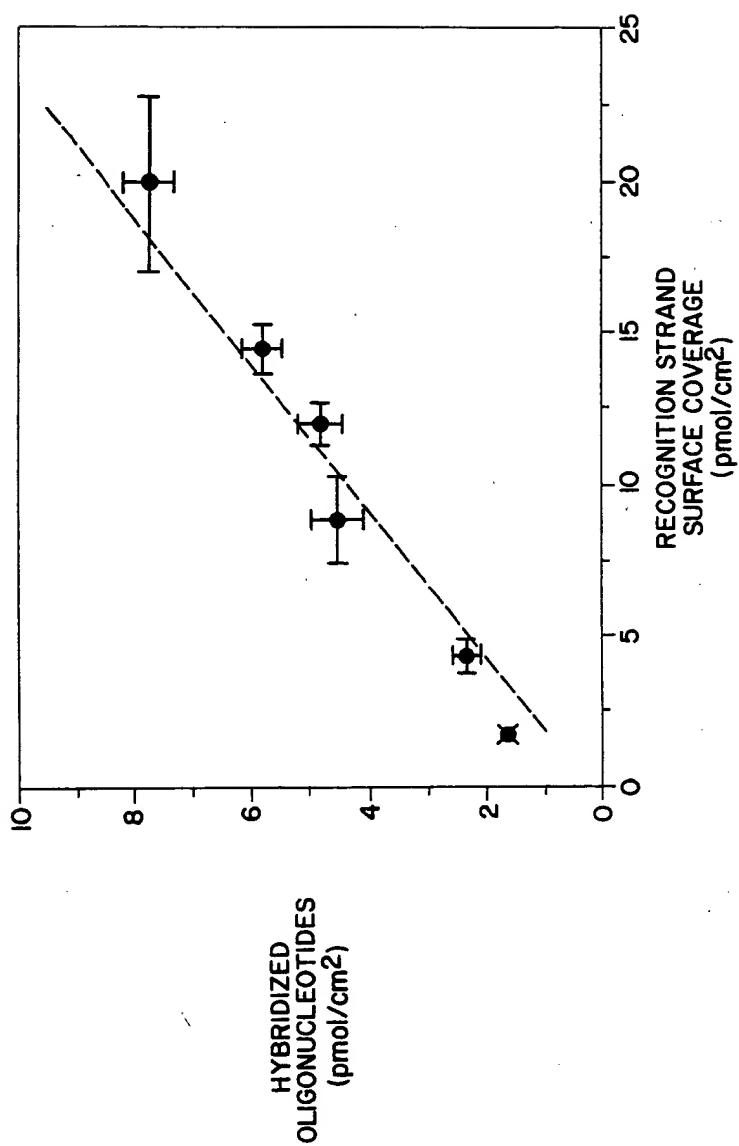
FIG. 30





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FIG. 3I






[SEQ ID NO: 56]

5' GGA TTA TTG TTA- -AAT ATT GAT AAG GAT 3'

CCT AAT AAC AAT TTA TAA CTA TTC CTA

[SEQ ID NO: 57] [SEQ ID NO: 58]



The diagram shows a DNA sequence with a vertical bar on the left and a circular node on the right. The sequence is divided into two parts by a hyphen. The first part is labeled [SEQ ID NO: 57] and the second part is labeled [SEQ ID NO: 58]. The sequence is: 5' GGA TTA TTG TTA- -AAT ATT GAT AAG GAT 3' and CCT AAT AAC AAT TTA TAA CTA TTC CTA. The vertical bar is on the left and the circular node is on the right.

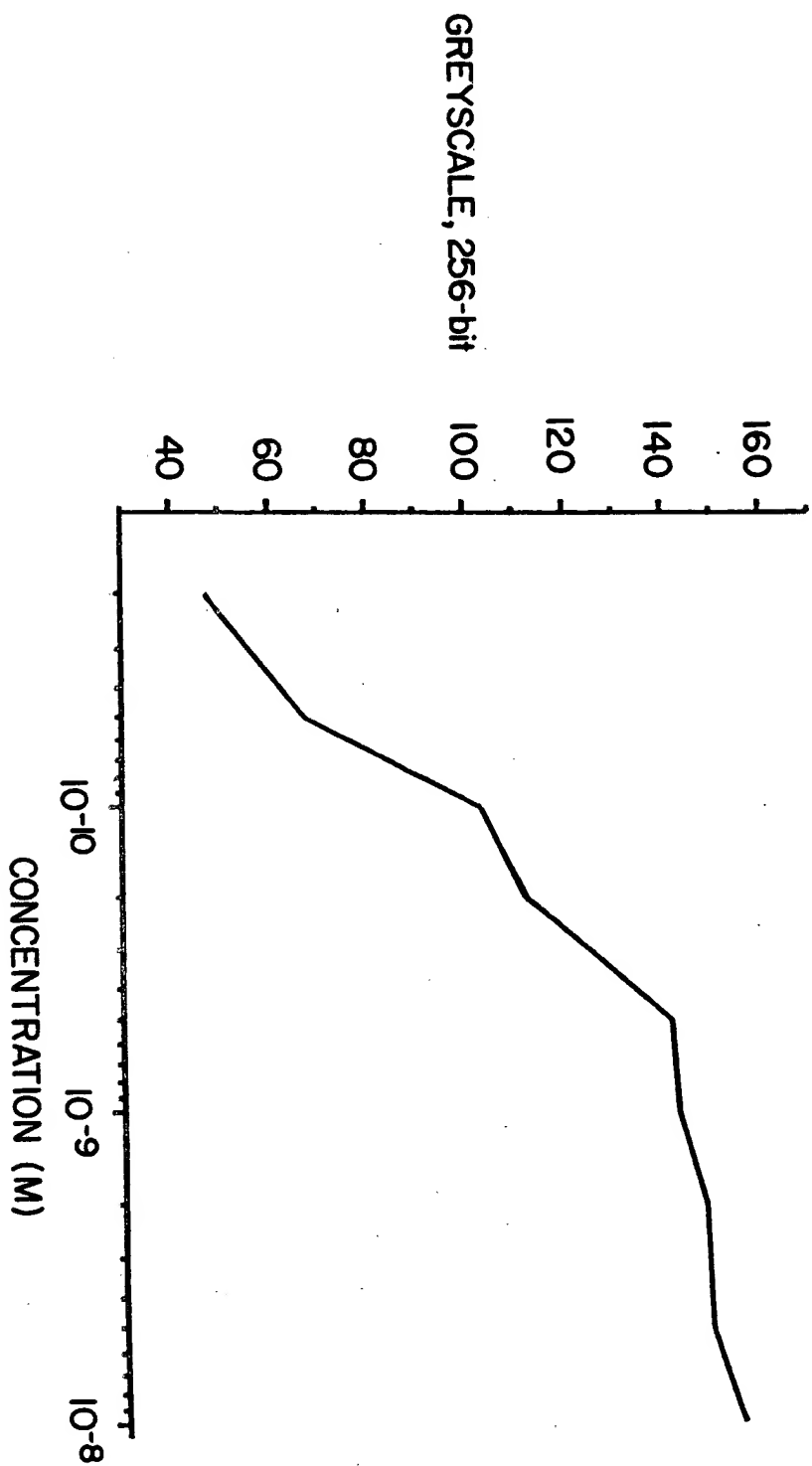
1. \sim (target DNA)

2. Au

Ag^+
hydroquinone
(pH 3.8)

Ag(s)
quinone

FIG. 34



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FIG.35A

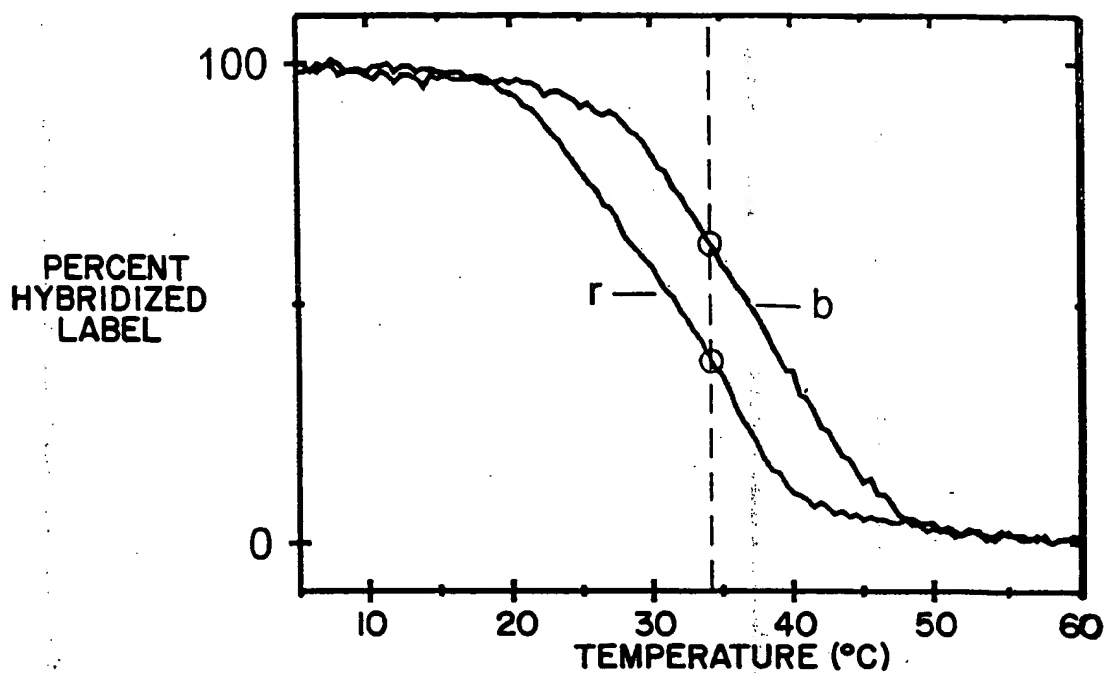


FIG.35B

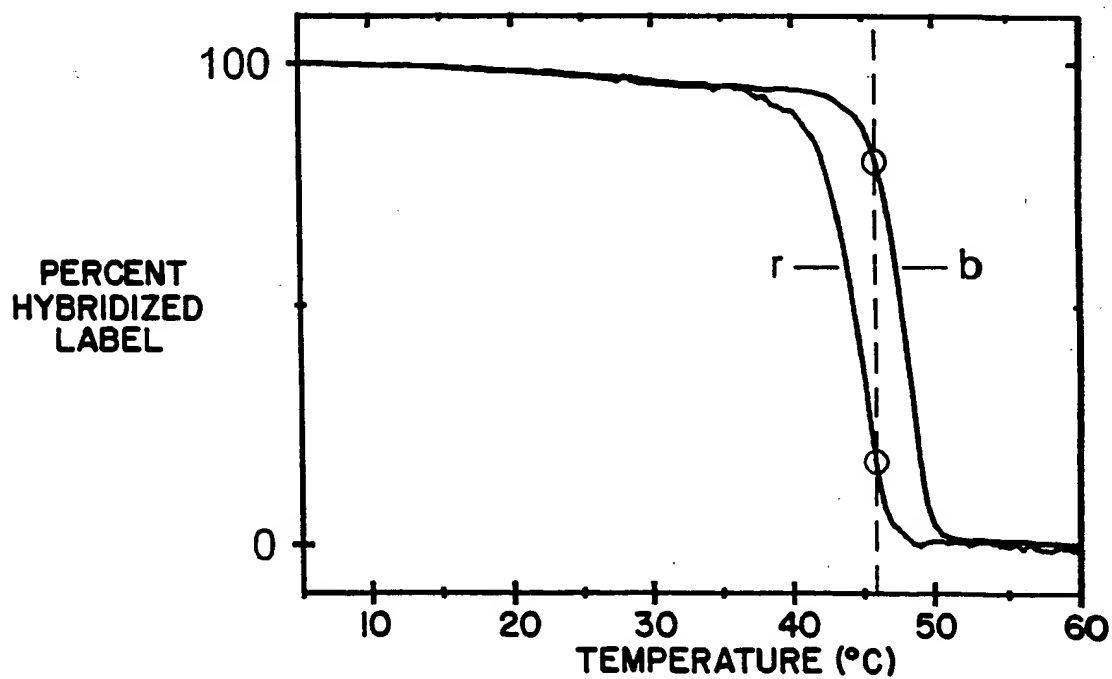


FIG.37A

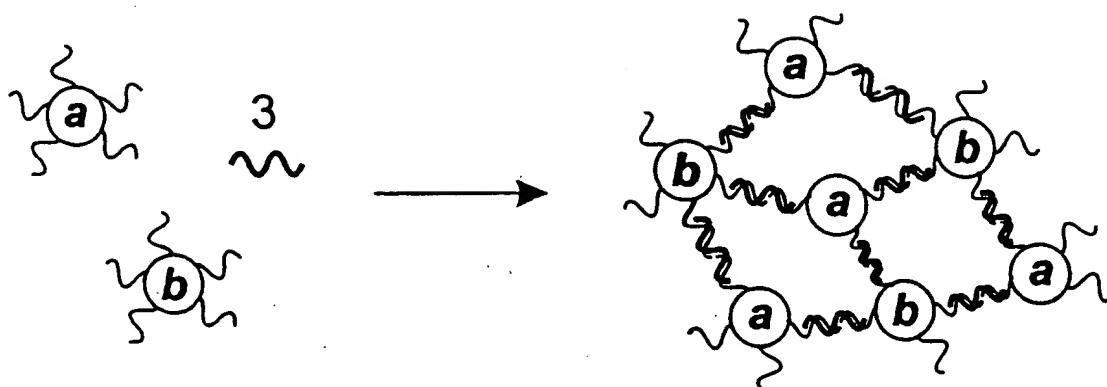


FIG.37B

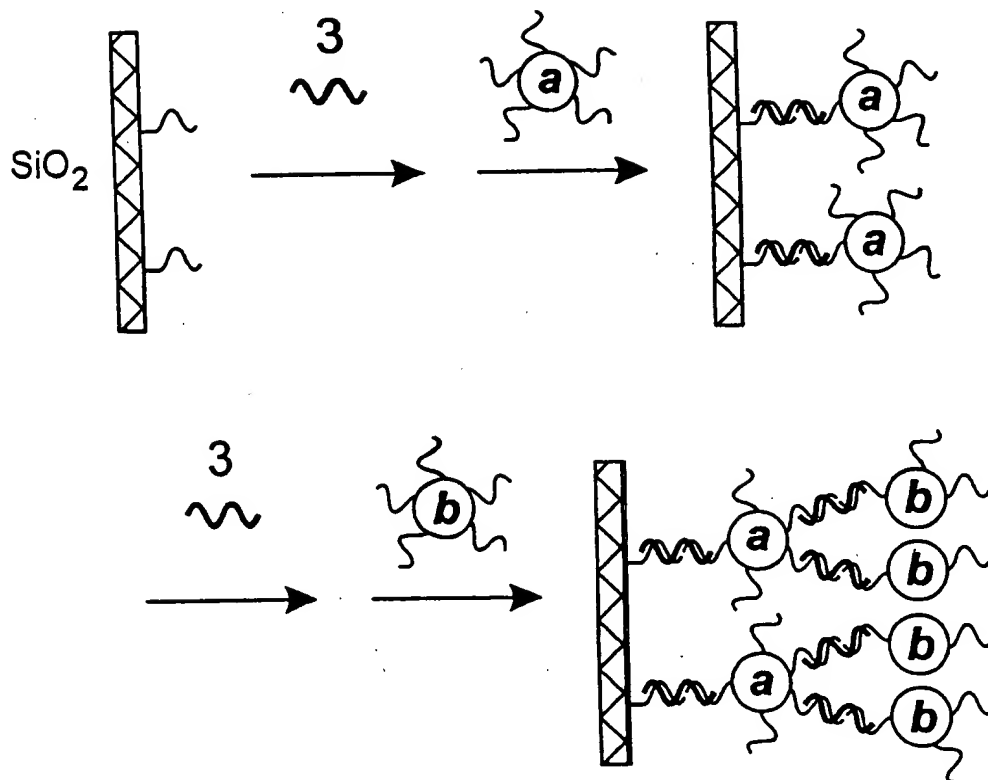


FIG. 38A

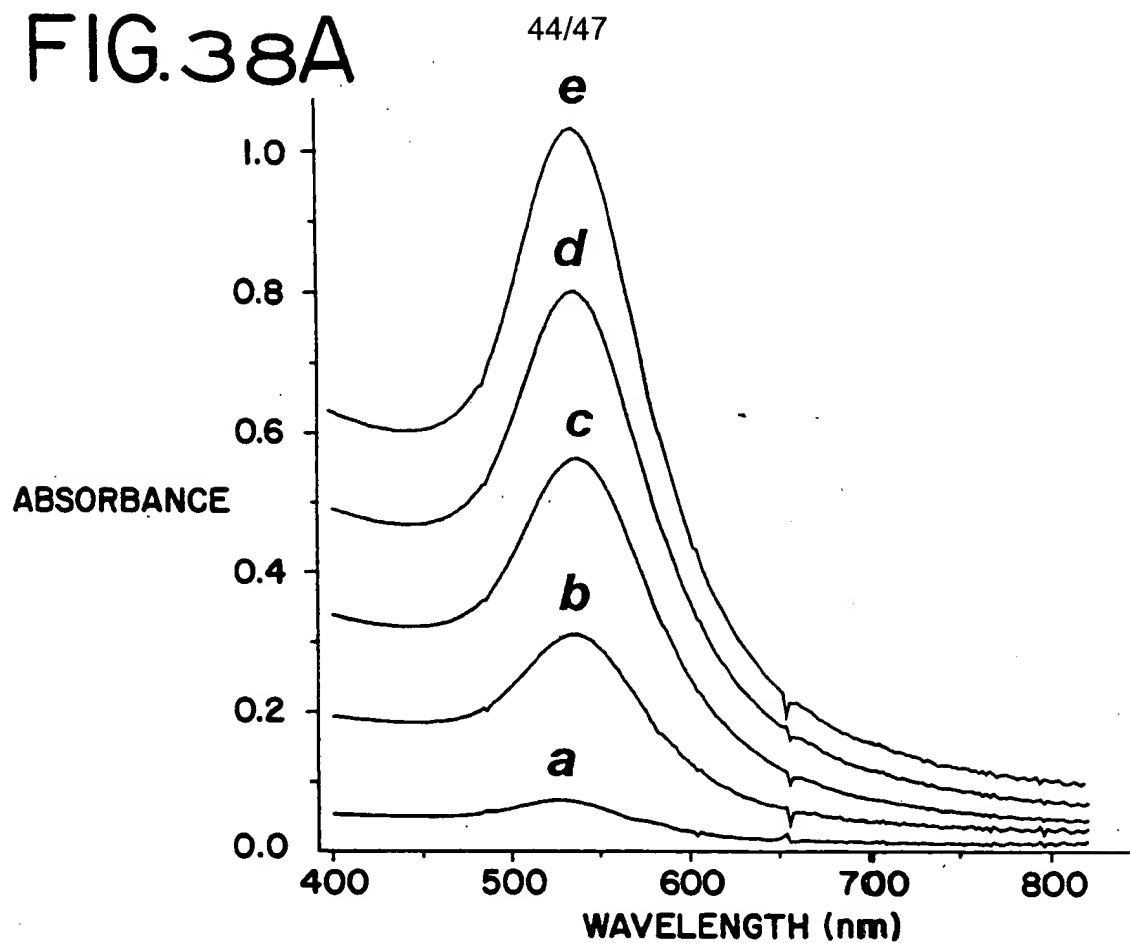
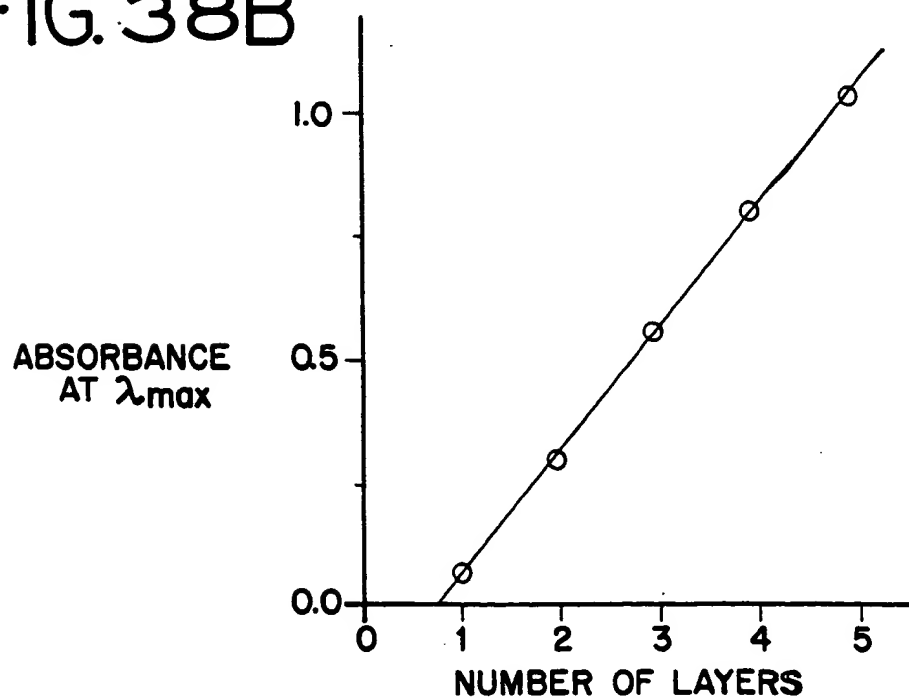


FIG. 38B





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FIG.39C

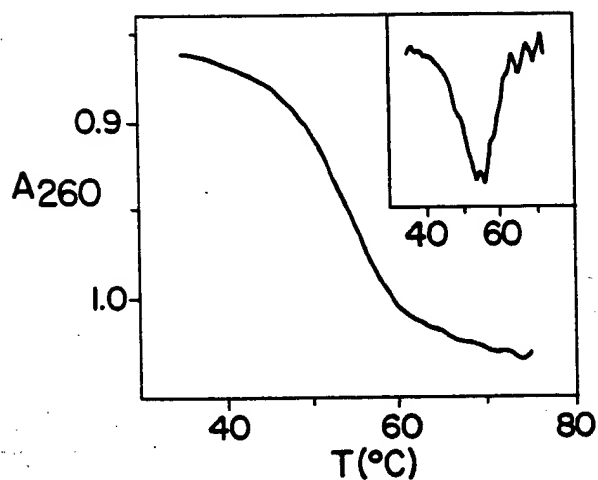


FIG.39D

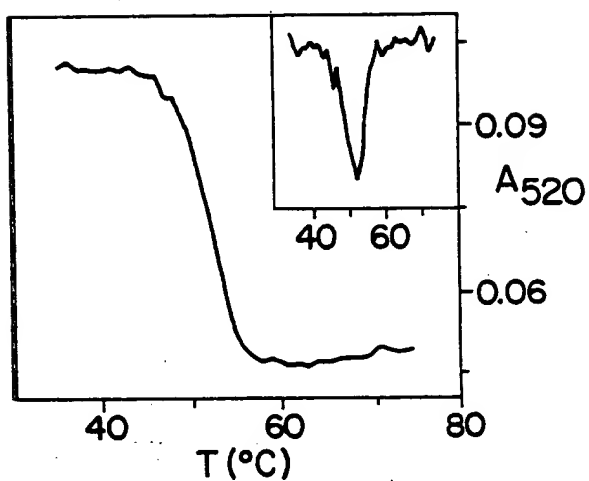


FIG.39E

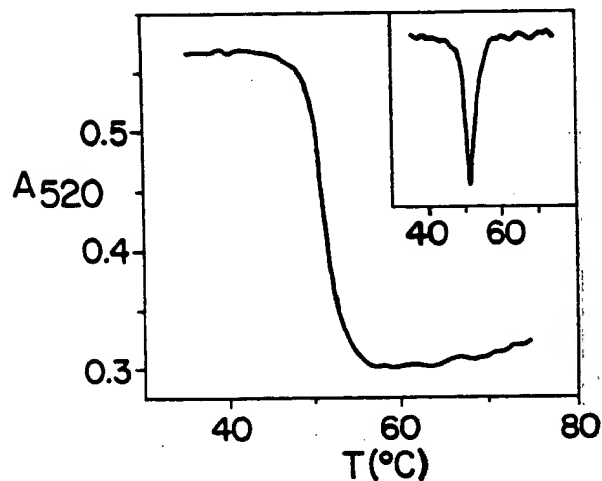


FIG.39F

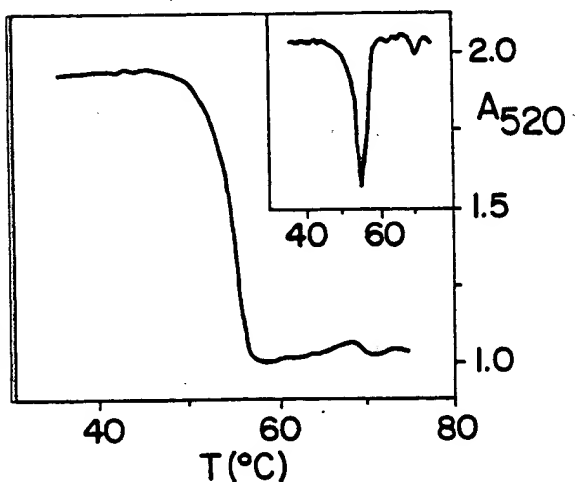


FIG. 40

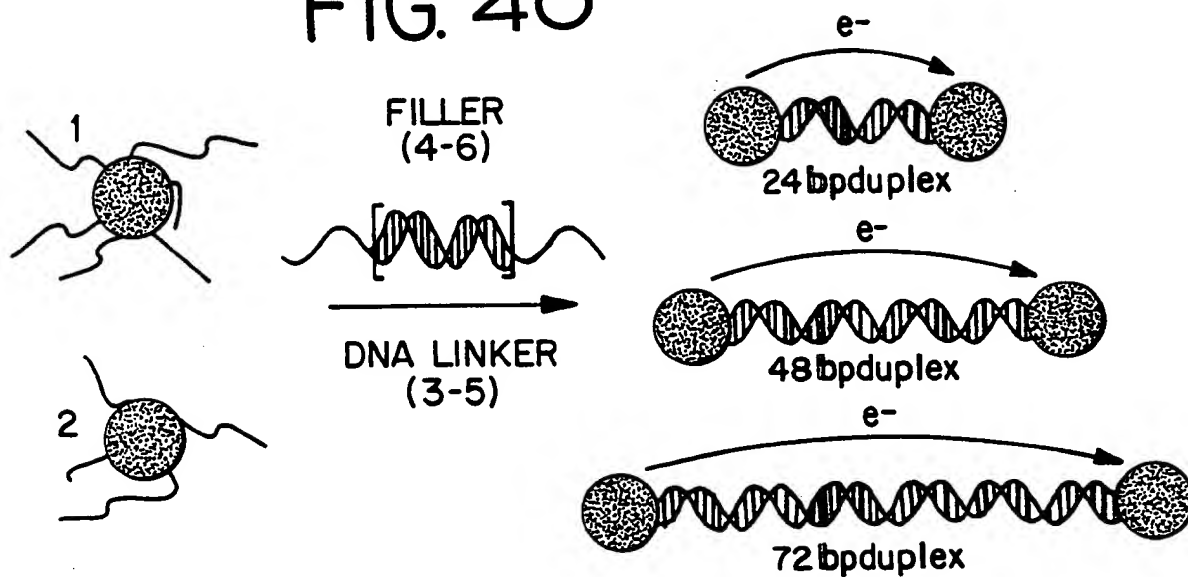
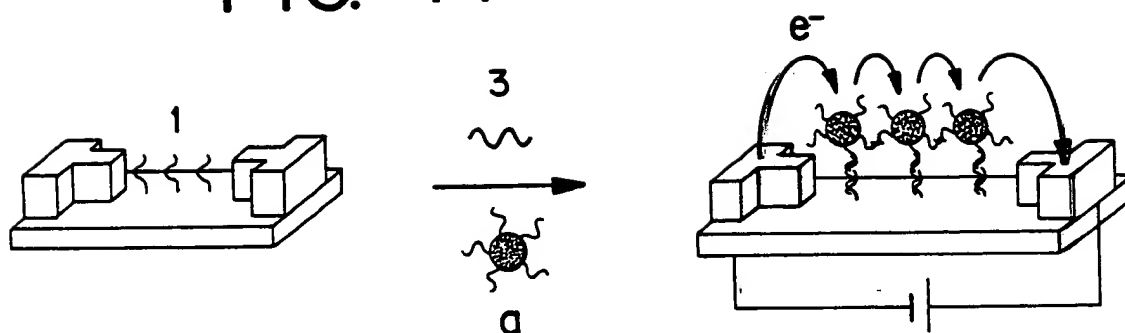


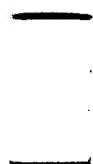
FIG. 41





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FIG.33



A



B



C



D



E



F



G

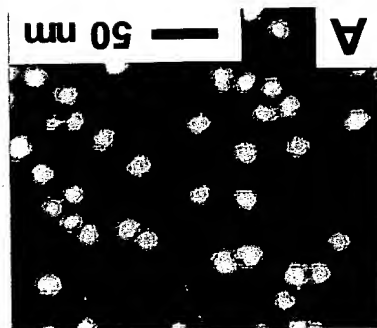


FIG. 39A

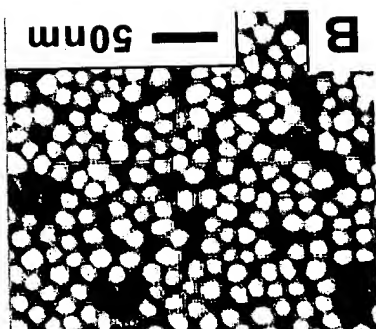
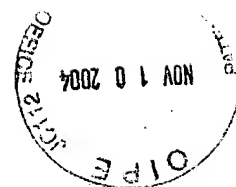
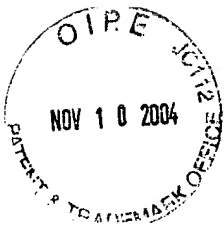


FIG. 39B

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FIG. 36A

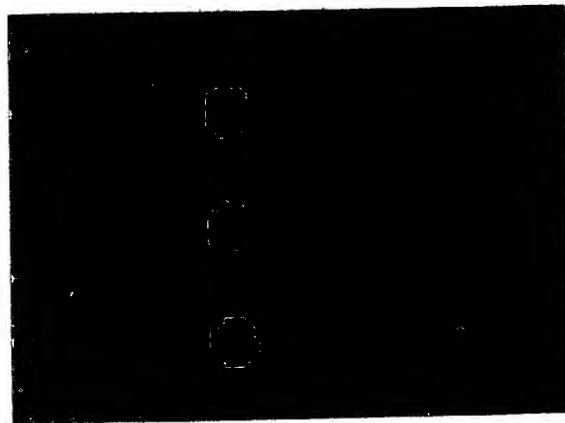
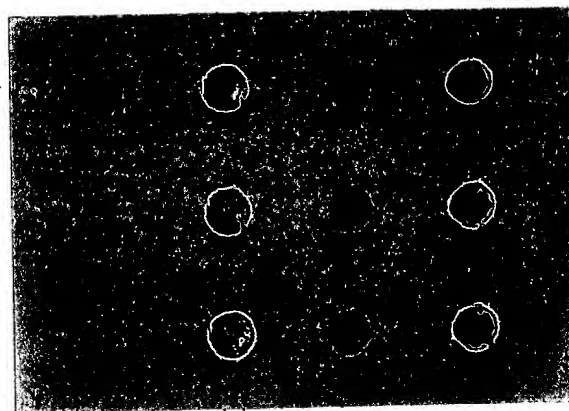


FIG. 36B



C A T G

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